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25X1

[redacted]

Memorandum For The Record:

2 December 1966

1. The following message [redacted] was sent, By LDX to [redacted] (CGS/DDI) on 1 December 1966 after having been coordinated with Mr. Lundahl:

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"Concur with proposal that NPIC conduct briefings of civilian agency heads (Interior, Commerce, Agriculture, etc.) as suggested by [redacted] These would cover Introduction to Capability of Sensor Systems and Good Illustrations of the Peaceful Uses of Satellite Recce. Obviously it would be possible to expand or tailor the briefings to the specific interests of the visitor.

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"Together with CIA/IAD we could cover aspects of the following: Geology, Agriculture, Forestry Management, Natural Disasters, Land Use, Urban Area Analysis, Mapping, Glacial Geomorphology, etc. Many of the photo interpreters have experience and/or degrees in Geography, Geology, and Forestry.

"Attached is a sample listing of some briefing boards currently on hand.

"If you require additional info please call me."

2. This was also discussed with [redacted] and it was agreed that a new briefing package on peaceful uses should be developed. A project will be established to initiate action to provide a much broader scope of coverage. A survey of all that has been done in the various fields mentioned above will also be conducted.

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[redacted]

Assistant for Operations, NPIC

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[redacted]

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20,000 Acre Forest Fire, Huslia Area, Alaska

Evaluation of US Dependents, Cyprus

Recreation or Industry Lake Baikal Area, USSR

Land Management in Israel

Land Mismanagement, USSR

Tornado Damage, Wichita Falls, Texas

Hurricane Prone Area, Florida, USA

Landslide Near Samarkand, USSR

Dam Break Results Near ISSYK, USSR

Anadyr River Flood, Far East Siberia, USSR

Industrial Fires, Igarka, USSR

Siberian Forest Fires, USSR

(OVER)

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Areas of Medvezhij Glacier Advance and Epicenter 113
Pamir Mountains, USSR

15 January 1965 Test Area, Semipalatinsk Nuclear
Weapons Proving Ground, USSR

16 Epicenter, 11 November 1964, Volcano Shiveluch,
Kamchatka, USSR

Earthquake Damage, Tashkent, USSR

Earthquake Area, Ho-Pei Province, China

Merchant Ship Convoy (Westbound) East Siberian Sea

Icebound Soviet Northern Sea Route Naval Convoy, Pevek,
USSR

Greenland Iceberg Sources

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COMMITTMENTS BY NPIC

NPIC has been committed only to providing, The Civilian Agency Teams under GIMRADA supervision, with following services:

1. Orientation Instruction - This would probably consist of:

*a. Briefing on applicable camera or other imagery-producing sensor systems.

b. Briefing on the NPIC and IAS Peaceful Uses Boards.

**c. Basic characteristics of the photogemmetric problem or associated technical problem.

*d. Organization of NPIC and discussion of equipment.

2. Provide control point for acquisition of available film and selected supporting material (not already available to the requesting agency) and determine its releasability with guidance from CIA Headquarters if criteria need elaboration. (Scheufele has been designated

25X1

3. Serve as consultant on coordinating committee under the chairmanship of DD/S&T.

(Any other support will require analysis of effect on total workload and coordination with higher authority if long-term, time consuming requirement is submitted.)

* Suggest addition of these items to round off orientation.
** Note first group of key officials are but for teams only.

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19 January 1967

Copy No. 4

MEMORANDUM FOR: See Distribution

SUBJECT: Earth Resources Observation Satellite (EROS) and Eastman Kodak - Itek (EKIT) Project Briefings

1. [redacted] Coordinator, Earth Resources Observation Satellite (EROS) project will present a one-hour briefing on the EROS project at the Multisensor Working Group Meeting to be held at 1000 hours in the Beige Room on 24 January 1967. The Earth Resources Observation Satellite is designed to study global resources for the U.S. Geological Survey. The areas to be investigated include cartography, environmental geology and mineral resources, hydrology and geography.

25X1

2. [redacted] project coordinator, and [redacted] project manager (Itek) for the Eastman Kodak-Itek (EKIT) project will present a briefing on the EKIT project at 1400 hours in the Beige Room on 27 January 1967. Project EKIT is a series of experiments involving various film combinations, solar angles, and sensors to ensure proper utilization of the potentials of the J-3 camera system and CORONA satellite.

2525X1

3. Space is available for the Division/Staff Chief or Deputy Division/Staff Chief at the EROS briefing, and space is available for two representatives of each division or staff at the EKIT briefing.

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[redacted]

Colonel, USAF
Assistant for Technical Development, NPIC

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27 April 1967

MEMORANDUM FOR THE RECORD

SUBJECT: Peaceful Uses

The following points were discussed this date with Mr. Lundahl after his meeting on Peaceful Uses of high level aircraft and satellite photography in office: 25X1

A. This project will be identified by the unclassified nickname - ARGO.

B. The next meeting in office will be on 1 June 1967. Prior to this time and roughly within the next two to three weeks, Mr. Lundahl would like to have the materials listed in paragraphs C, D and E prepared so that they will be available for use should an earlier meeting be called for. 25X1

C. The Technical Intelligence Division is to produce a mosaic of KH-4 photography which is to include the best available coverage of the area which will be specified by of the corps of engineers. will contact and acquire a precise map outlining the area of interest in South America. This mosaic should have an overlay which outlines the general boundaries and coordinates of the area for reference purposes. By best coverage is meant that coverage which is available at the present time irrespective of the fact that it may be cloud covered. The Technical Intelligence Division is also to prepare a similar mosaic utilizing index photography from the KH-4 system with the same type of overlay. 25X1 25X1 25X1

D. The sample frames which were selected by from Lockheed in his visit last week are to be used as sample frames for this exercise. Duplicates are to be produced and will be ordered by the Operations Staff. 25X1

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SUBJECT: Peaceful Uses

E. Mr. Lundahl pointed out that has a complete tabulation of the NASA test sites in the United States and would be glad to provide the coordinates for this. will contact and acquire same so that TID may ascertain coverage of these specific targets.

25X1
25X1
25X1

F. It is also desired that samples over Recife, Natal and Brazil be made for of NASA. All of these materials are to be provided to prior to release.

25X1
25X1

G. Mr. Lundahl also indicated that he was interested in ascertaining what collateral we had available in-house on the area to be specified by The Collateral Support Division will be advised accordingly so that they can assemble the necessary materials for the orientation course.

25X1

H. Mr. Lundahl pointed out that the questionnaires indicated that most of the personnel who would be participating in the orientation program were not photographic interpreter's, however some had had exposure or training as photographic interpreter's as late as 1960. It was therefore agreed in the meeting that we should plan our program on the basis that these people had no exposure to the PI field.

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Assistant for Operations, NPIC

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PEACEFUL USES OF SATELLITE RECONNAISSANCE

This orientation schedule is not intended to prevent discussions, and should be considered as "subject to change."

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Monday, 10 July 1967

0900 -

~~0830~~-0835	Welcome by Dir/NPIC, Intro of [redacted]	ACL	25X1
0835-0850	Introductory address by [redacted]		25X1
0850	Introduction of [redacted]	ACL	25X1
0850-0900	Address by [redacted]		25X1
0900-0930	Address by Dir/NPIC		
0930-1000	Check in and Course Admin. (Security, et al)	TMP, CXG, JPM	
1000-1030	Coffee Break		
1030-1130	Introduction to Program	[redacted]	25X1
1130-1300	Lunch		
1300-1315	Introduction to TID Presentation		
1315-1430	Current Camera Systems		
1430-1500	Coffee Break		
1500-1615	Current Camera Systems (Cont.)		

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Tuesday, 11 July 1967

0830-0900	Current Camera Systems (Cont.)
0900-0930	Film Indexing
0930-1000	Film Processing
1000-1030	Coffee Break
1030-1200	Image Evaluation;-Factors Affecting Image Quality
1200-1300	Lunch
1300-1400	Weather; Resolution--Corn Targets
1400-1430	Microdens. and Isodensers
1430-1500	Coffee
1500-1615	~~Mensuration; Photogram.~~ Techniques; Instruments

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Wednesday, 12 July 1967

25X1

0830-1000	Target Positioning; Precision Target Plots
1000-1030	Coffee
1030-1130	Attitude Determination
1130-1200	~~Improvements in Collection Systems~~
1200-1300	Lunch
1300-1430	~~Improvements in Collection Systems~~ (Cont.)
1430-1500	Coffee
1500-1615	Photo-Related Maps and Charts

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Thursday, 13 July 1967

25X1

0830-0915	Collateral Photography
0915-1000	Target Briefs and Packets
1000-1030	Coffee
1030-1130	Data Base Management
1130-1300	Lunch
1300-1400	Open Source Data
1400-1500	Target Predictions
1500-1515	Coffee
1515-1615	Tour PD

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Friday, 14 July 1967

25X1

0830-0930	Graphic and Publications Problems
0930-1000	Coffee
1000-1130	PSD: Photo Laboratory Printing Services Film Storage
1130-1200	Data Reduction: ADP Support
1200-1300	Lunch
1300-1330	Tour IPD
1330-1430	Detailed PI Support
1430-1500	Coffee
1500-1600	Photo Mosaics and All-Source Listings

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PAG/NPIC Briefing Schedule
Civilian Scientist Peaceful Uses Program

25X1

Monday, 17 July 1967

1030-1200	Electronics
1200-1300	Lunch
1300-1415	Aircraft Reconnaissance Exploitation
1415-1445	Coffee Break
1445-1615	Offensive Missiles

Tuesday, 18 July 1967

0830-1000	Defensive Missiles
1000-1030	Coffee Break
1030-1200	Naval Order of Battle
1200-1300	Lunch
1300-1330	Aircraft Identification
1330-1400	Color Presentation
1400-1415	Coffee Break
1415-1530	Missile Production
1530-1615	Closing Remarks

Wednesday, 19 July 1967

0830-1000	Nuclear Testing
1000-1030	Coffee Break
1030-1100	Nuclear Production
1100-1130	Film viewing display Peaceful Uses Boards Display

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[redacted]

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WORKING PAPER

5 September 1967

MEMORANDUM FOR THE RECORD

SUBJECT: Meeting of ARGO Steering Committee with Working Team at [redacted] 1 September 1967, 1400 hours 25X1

1. Present: [redacted] Chairman, Steering Committee, Working Team, and other representatives of working agencies; from CIA was [redacted] Guthe and [redacted] from NPIC. 25X1 25X1 25X1

consultant?

2. [redacted] began the meeting by saying the Steering Committee thought it should meet with the working group to get first-hand their views. The project officer, [redacted] (of GIMRADA), being late, he would call on the working members of each agency. 25X1 25X1

3. [redacted] of USGS asked to lead off and voiced the concern of the team as to what the purpose of the exercise was and queried whether it was effective use of the scientists' time. [redacted] (USGS) working member then took over and began by saying results would not be something they would wish to stake their reputations on; felt they had been spread too thin; as a familiarization exercise the project had a certain merit but now they were just doing "busy work" and felt they should give up PHASE II and proceed on to the reporting in PHASE III. He spoke of lack of ground truth and data bank; felt they were working somewhat in a vacuum. 25X1 25X1

4. Other working members carried on in similar vein. At the scales they were using and the area covered most information gained came down to geographic features, a basic tool for all participants but not contributing further to the dynamics of their different diciplines. There was no debating the value of the photography as a basic cartographic tool, but they could not do all by photos alone; they need collateral and ground truth. (They had been provided mosaics at 1:1,000,000, 1:630,000 and 1:250,000 scale.) There were complaints about the equipment. They spoke of the orientation given them at NPIC and the tour of AMS, in both places where they saw all sorts of sophisticated gear and then they were provided with

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[redacted] 25X1

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SUBJECT: Meeting of ARGO Steering Committee with Working Team at [redacted] 1 September 1967, 1400 hours

a handlens and a straight-edge to do their research and devise a proper evaluation. One suggested they should have done the exercise at NPIC or AMS. They spoke particularly of lacking an ITEK viewer. A hydrographer said, for example, that it was essential but impossible for him to tell whether streams were intermittent or not from the material with which he was provided; at AMS, with the photography on an ITEK viewer, he could see the water, even the wavelets. Some felt that rather than trying to cover such large areas (three, several thousand square miles each, had been chosen), they would have been better off to have worked a few frames on the ITEK viewer; they made plain they did not want to degrade the material but that they had bitten off more than they could chew.

5. [redacted] asked if they were recommending they not continue PHASE II and if they were saying they could not add significantly to the data base that already existed; the latter was an important statement but he doubted whether the group was ready to make that decision. What they were implying was that it doesn't make any difference whether the photography was there or not. The problem was that here is this wealth of material covering the world and what use could the civilian agencies make of it. A "mix" with other sources was certainly expected but what was the nature of mixes. He said the team would have to make the basic decisions but that a paper was expected from them discussing their conclusions in relation to the objectives of the excercise. (Someone said, "We don't know what the objectives are".)

6. Park (Agriculture) noted they were being asked to look at material "peaked" for cultural items. A different peaking - different filters and films - would be better for natural resources. Tepper (NASA) said of course they were interested in developing the collection systems for earth resources.

7. [redacted] Corps of Engineers, pointed out that the military use the material for mapping even though it was not designed for that and he thought there must be a wealth of information for the civilian agencies to use even though the material was not collected with their problems in mind.

8. [redacted] again said that there were two things to make plain:

a. There was a wealth of photography covering the whole world. There was no reason why this should not be used for operational decisions at higher levels; he was not speaking now of downgrading security controls.

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SUBJECT: Meeting of ARGO Steering Committee with Working Team at [redacted] 1 September 1967, 1400 hours

b. Each, as the representative of his agency, should decide how this material can be useful to his agency.

9. Guthe suggested that there was a security problem: what size cadre would be necessary to make exploitation effective? Would there be one center or more? [redacted] replied this was a major government decision for the future. In the meantime it was up to the civilian agencies to familiarize themselves with the material so that decisions would not be made out of ignorance.

10. Then followed more discussion how to proceed: whether the whole group should go to work on an AID problem relating to agricultural land in the Santa Cruz area of Brazil, whether to finish the large Area I already begun, whether to continue with the hydrological study in Area III. [redacted] said he needed a paper in one week stating what they intended to do. [redacted] AID will chair. [redacted] said it was important PHASE II be generally successful and also that AID get results from it. Also something was to be done about getting the equipment they needed.

11. Next meeting Friday, 8 September 1967, 1500 hours at [redacted]

12. After meeting Engineers asked if NPIC had an ITEK viewer available for loan; they would check AMS, also look at a 20X-40X viewer presently at [redacted] but not used so far by the group. I said I would check if they couldn't come up with a solution otherwise.

[redacted]
Intelligence Officer
Operations Staff

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WORKING PAPER

WORKING PAPER

5 September 1967

MEMORANDUM FOR THE RECORD

SUBJECT: ARGO (Peaceful Uses) Highlights, 10 August - 1 September 1967

1. 10 August 1967. Steering Committee Meeting, Executive Office Building, 1500-1700 hours. Present: [redacted] Chairing, ARGO Principals, GIMRADA Project Officer [redacted] (NASA) [redacted] (Office Chief of Engineers), [redacted] Guthe (CIA), [redacted] (NPIC).

25X1 25X1 25X1 25X1 25X1

a. [redacted] announced principal subject of business was to choose the areas in South America to focus on for Phase II.

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b. [redacted] reviewed revised plans for Phases II and III (Attachment A). Phase II to begin 14 August; Phase III 19 October and extend to 15 November; publication of report by 15 December. Total project time thus shortened by two months. Phase II envisions medium scale studies of several areas, only one of which so far chosen (in northwest corner of total area). Others were to be chosen the following week. [redacted] said, "Do it tomorrow". Areas would be chosen to permit participation in each of greatest number of scientists. Overlay of small scale material will be done by contractors.

25X1 25X1

c. There was complaint from principals about delay in materials. [redacted] attempted to explain. [redacted] said delays "not acceptable", that it seemed to him that vice-presidential interest in the project was sufficiently high level to get action and if there were delays the scientists were to call him. He turned to me and asked that an expediter should be appointed. I said I would be and gave name and phone number. I told [redacted] afterward that as far as we were aware there were no bottlenecks at our end, that there may have been some confusion due to communications as to just what was wanted. (This was afterward reported to [redacted] who called [redacted] and assured them that there had been no bottlenecks at our end. Since then careful records of requests and delivery dates have been kept and almost all requested material has been delivered ahead of schedule.)

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[redacted] TOP SECRET RUFF WORKING PAPER

SUBJECT: ARGO (Peaceful Uses) Highlights, 10 August - 1 September 1967

d. A seminar on Phase II is planned to be held at NPIC on 18 October from 1300 to 1600 hours. (Training Branch has been advised and the Auditorium reserved.)

e. [redacted] raised the apprehension of the working scientists in regard to the products expected from Phase II. They felt it could not be considered to be a finished product and would not want to stake their professional reputations on it. Felt they lacked good data base on one hand and were not doing justice to material on the other hand. [redacted] assured him product would not be tested by the scientific community but that whatever came out should be a tangible thing, not generalities. [redacted] came back to saying, expedite your selection of areas and plan of attack -- "Get it done!"

d. [redacted] mentioned need to feed evaluations of material to NASA for planning future collection programs. Principals indicated they not all feel competent. [redacted] remarked he had told [redacted] to use group as he could.

e. Point was raised that Steering Committee should meet with workers, to define objectives, surface problems, rather than expect best results from sweeping decisions from Steering Committee. It was agreed next meeting of Steering Committee would be held with Working Group. There were further remarks about encouraging visits to Working Group: NASA had suggested Space Advisory Group visit; [redacted] may want group of outsiders to evaluate; perhaps some commercial people should be brought in (but this latter Steininger noted was best put "on back burner".

f. Next meeting Friday, 1 September at [redacted]

2. Requests for material for the close of Phase I and for Phase II were received Monday, 14 August and delivered 16 and 18 August per schedule, and 21 and 25 August well in advance of schedule.

3. [redacted] NASA, VISITED NPIC 1ST AUGUST FOR TWO HOURS TO REVIEW "PEACEFUL USES" BOARDS. [redacted] ASSEMBLED.

[redacted]
Intelligence Officer, Operations Staff, NPIC

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ATTACHMENT A

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER TOPOGRAPHIC LABORATORIES
FORT BELVOIR, VIRGINIA 22060

10 August 1967

PROJECT ARGO
REVISED PLAN FOR PHASES II AND III

GENERAL

Two major changes have been made to the original plan:

1. Work effort on Phase II will be divided, with contractor personnel, assisted by the participating scientists, making the small-scale overlays, and the scientists, assisted by contractor personnel, doing the medium-scale studies.

2. The total project time has been shortened by two months, ending in December instead of February.

PHASE II

Phase II will begin on 14 August 1967.

The contractor will prepare 1:1,000,000 scale overlays for the entire study area for the following subjects: Surface Configuration, Hydrologic Features, Vegetation, Geology, Surface Materials, and General Climatology. Specific legends for each overlay will be the result of discussions between the contractor analysts and the scientists.

All of the contractor effort will be done under the existing contract, which will be modified to account for additional man-hours that could not be estimated when the contract was prepared.

The scientists will prepare several medium-scale studies. Only one of the areas has been selected. For this area, however, all of the materials are available. Other small study areas will be selected by the scientists during the week of 14 August.

Listed below are the subjects on which information will attempt to be developed by the scientists. Each of the principal investigators shown will be assisted by specialists in other relevant disciplines, as well as by contractor personnel, as required.

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SUBJECT

PRINCIPAL INVESTIGATOR

25X1

Average Annual Precipitation
(According to Type)

Average Annual Water Yield

Land Use

Estuarine Mechanics

Transportation and Communications

Potential for:

Transportation and Communications
Agricultural Areas
Forest Product Areas
Power Sources
Mineral Areas
Environmental Hazards

System Deficiencies

The medium-scale studies are scheduled to be completed by 6 October 1967. During the week of 9-13 October, the scientists will examine and compare the small-scale and medium-scale studies and prepare any additional analyses that someone may want to attempt.

A seminar on Phase II could be held on 18 October.

PHASE III

Phase III would begin on 19 October and extend until 15 November, at which time the draft coordinated evaluation report will be given to the contractor for publication. Reproduction will be completed by 15 December.

A seminar on the total project could be held on 20 December.

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MAJOR MILESTONES

14 August	Begin work on both small-scale and medium-scale studies
7 September	Complete plans for Phase III
29 September	Complete small-scale overlays
6 October	Complete medium-scale overlays
13 October	Start final drafting
18 October	Seminar on Phase II (Bill 2, 3)
19 October	Begin Phase III
15 November	Complete Phase III
16 November	Start preparation of Phase III report
1 December	Complete Phase II Report Production
15 December	Complete Phase III Report Production
20 December	Seminar on complete project

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Working Paper
~~DRAFT~~
11 September 1967

MEMORANDUM FOR THE RECORD

SUBJECT: Meeting Of ARGO Steering Committee With Working Team At [redacted], 8 September 1967, 1500 hours

25X1

1. Present: [redacted] Chairman, Steering Committee, Working Team, and other representatives of participating and interested government agencies (from NASA, [redacted] from OEP, [redacted] from CIA, Otto Guthe; from NPIC, [redacted]

25X1

2. [redacted] opened meeting, saying they would hear report of plan for Phase II from [redacted] then adjourned for 15 minutes while Steering Committee considered report, then go back into session.

25X1

3. [redacted] began by saying plan was not too different from previous one except some different areas chosen, sizes of areas changed and problems of participants linked more closely. Went on to make following observations on project "involving differences in viewpoints of experts and non-experts". Since experts get good results it is assumed others will too (as experts he cited NPIC). But as non-experts they had gone through the following phases:

25X1

A. Great enthusiasm following their orientation at NPIC; a feeling that material would answer many problems.

B. Disillusionment with mounting problems. Found material beautiful but they were unable to be sure of answers; for example, they

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25X1

couldn't tell a canal from a road from a pipeline.

C. Now in third phase when some enthusiasm comes back and although growth is slow and not to level of first phase the return is a straight line function "up to now". He went on to observe that the seniors in the civilian agencies could be expected to go through similar phases.

4. The new Phase II plan presented by [redacted] envisions three study areas and the following schedule (copy of his paper will be forwarded us by the TKH Channel.): 25X1

A. Area I. 28,800 square miles. Agricultural land, mostly in use. Will not discover new agricultural resources but does contain some areas of desert, salt flats, erosion problems about which recommendations could be made. There is much ground truth available for area and members of working party have worked in area. They will produce general overlays to ascertain whether they can be done quickly and whether results worthwhile to the civilian agencies. They will then proceed to a small sample (c. 200 square miles) in vicinity of La Paz for intensive study, and then to an area of c. 50 square miles where KH-7 imagery available. They would hope to finish Area I by 18 September. If not done by then they could be faced with a decision. They want a full 3 weeks on Area II and if Area I is not done by 18 September they may want to postpone SEMINAR ~~sessions~~ for one week (from 18 October to 25 October).

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B. Area II. 9,800 square miles, east of Andes, an area of discovery, little or no ground truth. Would hope to discover potential agricultural lands. This area much like a denied area. Here they would not do small-scale overlay but go immediately to a 3-week concentrated study of a small sample area of c. 200 square miles. They would hope complete Area II by 6 October.

C. Area III. 92,000 square miles, with about half of water. Mostly for hydrographic studies. Don't plan to do much else with unless time permits.

5. [redacted] queried possibility that after Phase III, they might wish to restudy Phase II. If such a possibility should appear high, suggests group do part of Phase III analysis now.

6. Steering Committee went into session and then [redacted] reported Steering Committee was well pleased with plan and endorsed, but left open one point, i.e., that of para. 5 above, that they might want to look at Phase III material before 6 October, and he suggested they get their photo orders in now on a contingency basis.

7. [redacted] (NASA) (who was quite "edgy") said NASA hoped to get data from the group as to what or what not NASA should fly. This was part of the charge to the group. There were budget considerations coming up and NASA faced decisions in relation the Earth Resources Program. User agencies were going to be called upon in next couple of weeks or so for choices as to alternatives brought on because of budget cuts.

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wondered, in this case, whether test site studies of Phase III should come first. A working member queried what they were to do for NASA. said that in Phase III it was hoped NASA could be advised on a number of questions; hopefully, working members would have gained enough experience by then to answer NASAs questions as to what needed.

8. said he thought he could summarize now their feelings:

A. Can't see more in the satellite material than in conventional photography.

B. Synoptic view of added value.

C. Coverage, particularly multiple coverage, easier to get. (It might take him 6 years to get conventional coverage of an area wanted in South America, for example).

D. Must go beyond back-or-white but can recommend KH-4 and KH-7 types for civilian use.

9. suggested problems would be in different "peaking" and beyond black or white. said not completely so, not at all; that for first time the agencies had had an opportunity to study the KH material and now perhaps the old requirements they expressed regarding resolutions and other parameters were no longer valid after this exercise, and they were going to be queried again. interjected that the agencies' previous recommendations had not been made wholly from an "unclassified state of knowledge".

10. suggested they keep NASA problems in mind. Next

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meeting 6 October, 1400 hours, at which time plans for Phase III and progress of Phase II will be reviewed. Workers are to choose areas for Phase III as soon as possible. [redacted] hopes to bring film orders to Stallings early week of 11 September).

11. General Comment: Morale of working group was up. Best since I have attended the meetings. At last they have a plan of their own devising and feel they can get on with it.

[redacted]

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TSR

25 Oct 67

PROJECT ARGO (Peaceful Uses) requests for:

1. Reproductions of KH-7 Color photography for use in ARGO final report. [redacted] request (via [redacted] ETL -formerly CIMRADA- ARGO project officer). Precise amount material not specified (or yet determined) but estimated, by [redacted] could be 20 exposures or less in 15 paper copies each, plus transparency. (Cost of reproduction estimated by NPIC/PSD at [redacted] man hours). [redacted] advised of request and policy clearance of material approved by [redacted] 25 October 1967. 25X1

2. NPIC Briefing Boards on Earthquake damage in Tashkent and a rural area south of Peiping, China, and flood damage in the Anadyr Valley, Siberia, USSR, for study and possible reproduction [redacted] Clearance also approved by [redacted] 25 October 1967. 25X1

Stallings

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30 November 1967

MEMORANDUM FOR THE RECORD

SUBJECT: Project ARGO

1. Project ARGO nears its completion. This is the program initiated [redacted] in agreement with the DCI and with Secretary Vance for DoD, to investigate the uses of satellite photography (KH-4, KH-5, KH-7, [redacted] for agencies outside the intelligence community. The final report is now being assembled for the working representatives of the agencies involved by USAETL (GIMRADA) at Autometrics in Alexandria.

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25X1

2. The culminating briefing for interested top government officials is scheduled to be held at NPIC on 18 January 1968. It is expected that some cabinet members will attend and perhaps the Vice-President. A special briefing will be held the preceding day directed to [redacted] of AID.

25X1

3. Preliminary briefings at [redacted] have been held for personnel from the various interested agencies, including the Executive Office and the Bureau of the Budget. A special briefing was held 29 November 1967, chaired by [redacted] office. The attendance list, program and biographical sketches of the ARGO working team are attached.

25X1
25X1

[redacted]

25X1

Intelligence Officer, NPIC

Attachments:
a/s

[redacted]

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ARGO Briefing, [redacted] 25X1
29 November 1967

ATTENDANCE LIST

[redacted] 25X1

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ARGO Briefing

29 November 1967

Suggested Time Limit	Item	Speaker	Props
5 Minutes	INTRODUCTION		2 Briefing Boards
15 "	ARGO ACTIVITIES		Blackboard
10 "	PHOTOGRAMMETRY		Briefing Boards
10 "	FORESTRY & AGRIC. LAND USE		" "
10 "	GENERAL HYDROLOGY		" "
10 "	SPECIAL HYDROLOGY		" "
10 "	GEOLOGY		" "
10 "	CULTURAL FEATURES		" "
10 "	MARINE SCIENCES		" "
25 "	GENERAL DISCUSSION		" "
5 "	SUMMATION		" "
120 Minutes			

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[redacted] 25X1

31 January 1968

Copy 3

MEMORANDUM FOR THE RECORD

SUBJECT: Visit of [redacted] United States Department of Agriculture, Agricultural Stabilization and Conservation Service (USDA/ASCS) 25X1

1. [redacted] USDA/ASCS, visited TSD/TSSG 30 January 1968 in connection with project ARGOS which is the code-name for the "Peaceful Uses of Satellite Photography" project. [redacted] is a member of the panel which NPIC hosted for a two week orientation period, and that TSD personnel briefed on certain camera systems. 25X1 25X1

2. [redacted] was interested in TSD's views on mensuration accuracy as they applied to two distinct problems in the field of agriculture: 25X1

a. Part of USDA/ASCS's mission is to acquire and compile accurate data on domestic farm acreage in connection with certain USDA policies of price supports. ASCS makes measurements on six inch focal length mapping photography and on the basis of these measurements, a farmer is assigned an official acreage for his fields. [redacted] said that the accuracy requirements were 1% for any side of the field and 2% for the acreage. He wanted to know if the same accuracies could be attained from satellite photography. 25X1

b. The second area of interest concerned USDA interest in "emerging nations" or "underdeveloped" nations. For purposes of regional planning, [redacted] wanted to know if we could meet 10% accuracy requirements in area measurements. 25X1

3. Before replying specifically to [redacted] questions, it was necessary to generally state our present repetitive or pragmatic approach to accuracies, and to discuss in general terms a possible method of theoretical error determination by error propagation. We also talked over the inter-action of system vs. resolution error, error 25X1

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SUBJECT: Visit of [redacted] United States Department of Agriculture, Agricultural Stabilization and Conservation Service (USDA/ASCS)

25X1

of a point in a local system, error of the distance between two points, error of an area, and the significance of the term sigma in discussing various accuracy statements. It was pointed out to [redacted] that to our knowledge very little work has been done in this field either at NPIC or elsewhere and that many of the ideas presented during our discussion were personal "intuitive" feelings which could not be substantiated at this time.

25X1

4. In answer to paragraph 2a, [redacted] was told that it was probably not feasible to expect a 1% accuracy for distances or a 2% accuracy for areas at this time to any degree of confidence. It would be possible to produce from our files many measurements of the Phoenix Test Range which do achieve accuracies better than 1% but our statistical base (sample size) would be suspect. In other words even though we may achieve 1% accuracies, we could not estimate if we could achieve them at a 1 sigma (67%), 2 sigma (95%), or 3 sigma (99.7%) value.

25X1

5. In answer to paragraph 2b, [redacted] was told that in TSD's opinion we could measure to a 10% accuracy in area at a 2 sigma (95% of the time) value. It was re-emphasized to [redacted] that this was personal opinion and we had no statistics to back this claim.

25X1

25X1

6. Two methods were suggested by TSD that might increase the value to USDA. First, the use of stereo was suggested since, in effect, any distance would be obtained from two photographs and any pointing irregularities should be improved by stereo viewing. Second, if an error analysis routine were developed, it could predict and flag all area values that exceeded USDA accuracy requirements.

7. [redacted] is planning to discuss the problem further with his group and it's quite possible he will require more assistance from TSD.

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[redacted]

NPIC/TSSG/TSD

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cy 1 - project folder 22346-7, TSSG/TSD
2 - TSD/chrono
3 - NPIC/Office of Director [redacted]

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WORKING PAPER

Project ARGO (Peaceful Uses)

A symposium to mark the end of the Project ARGO's Team's investigations (of KH-4, KH-5, KH-7 [redacted] 25X1 is now scheduled to be held by Project ARGO in the NPIC Auditorium Wednesday, 6 March 1968. 25X1

The program is aimed at a technical audience, although managerial types are also expected.

It will last all day. The morning's schedule (0930-1230) is planned to have an introduction by [redacted] or [redacted] 25X1 describing the objectives of the Project, followed by the teams' presentation of 8-10 papers on results. The afternoon is to be devoted to a plenary session at which questions will be entertained and discussion encouraged. If anticipated discussion developes the group may be broken into as many as 6 discussion groups. 25X1

WSS has indicated that NPIC could use 12-20 seats. It is expected that the demand from the Washington area will exceed the 150 capacity of the Auditorium. [redacted] 25X1 will soon write invitations to the agencies via members of the "Steering Committee" asking for nominations for attendance, to be submitted to him by 26 February.

The report will be published previous to the Symposium and available.

WSS

[redacted] 25X1

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13 February 1968

MEMORANDUM FOR THE RECORD

SUBJECT : Project ARGO - Comments on [redacted] Draft of Memo to Accompany ARGO Final Report

REFERENCES: A. [redacted], 12 February 1968, Covering Memo from AD/DCI/NIPE Requesting Comments on

B. [redacted] 9 February 1968, Draft of [redacted] memo to accompany Project ARGO Final Report and to be signed by [redacted] Special Assistant to the President for Science and Technology

1. On the morning of 13 February, [redacted] advised that [redacted] draft and that they wished a single DDI reply to NIPE on [redacted] hoped to prepare the reply that day. NPIC comments, approved by the Director and Executive Director, were phoned [redacted] during the morning. [redacted] stated he had no need for follow-up memo. [redacted] NIPE, was then advised that NPIC comments had been provided [redacted] for the DDI's reply to his memo.

2. There follows the text transmitted by phone to [redacted]

A. We agree with [redacted] three points.

B. Beyond these, it is certain that the proposed standing committee will be making requests of NPIC for materials and other miscellaneous services. Something should be said in the comments back to [redacted] that NPIC's ability to provide such services must be subordinate to NPIC first meeting a heavy load of intelligence requirements.

C. Believe also it would be advisable to insure that there is understanding of the fact that imagery analysts, photogrammetrists and other such specialists are in extremely short supply and there needs be some arrangement to avoid emphasizing

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SUBJECT: Project ARGO - Comments on [redacted] ~~Draft of Memo~~ 25X1
to Accompany ARGO Final Report

peaceful uses at the expense of intelligence (or vice versa) until the country's campuses and training facilities, through inspiration, begin to meet the various national needs.

D. For your information NPIC to date has expended 3,279 man hours in support of Project ARGO, 2,256 of which were expended in FY 68.

[redacted] 25X1

Assistant to Deputy Director, NPIC

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4 March 1968

MEMORANDUM FOR: Chief, Planning, Programming and Budgeting Staff
Chief, Imagery Exploitation Group
Chief, Production Services Group
Chief, Technical Services and Support Group

SUBJECT : Project ARGO Symposium, NPIC Auditorium, 6 March 1968

1. Because the number of applicants for seats for the Project ARGO Symposium far exceeds the capacity of the NPIC Auditorium, the seat allotment of the various agencies has had to be reduced. We had originally provided to [redacted] Executive Office of the President, a list of 20 names, with the understanding that alternates would also use many of these seats during the course of the day. We now have 10 seats allotted, in the names of the following individuals: 25X1

Mr. Lundahl
[redacted] 25X1

2. In addition to the above, the original list had the following names. Perhaps you will find it desirable for these and others who had so planned to use seats when they are free.

IEG: [redacted] 25X1

PSG:

TSSG:

[redacted] 25X1

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25X1

3. A Working Agenda is attached.

4. Lunch is scheduled from 1230 to 1330 and it is anticipated that most of the 150 attendees will be eating in the [redacted] cafeteria. It would be appreciated if you would advise your personnel for most to plan to eat early.

25X1

5. Security level of the Symposium is T-KH, but T-KH discussion is restricted to KH-4, KH-5 (DAFF), KH-7 [redacted] Request you remind your personnel attending of the restrictions.

25X1

25X1

[redacted]
Assistant to Deputy Director, NPIC

Attachment:
A/S

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12 June 1968

MEMORANDUM FOR THE RECORD

SUBJECT: ARGO Committee Meeting, 10 June 1968. Executive Office Building, Room 303, 1000 Hours

1. Agency participants:

25X1

2. This was the first meeting of a reconstituted committee to consider "civilian agencies'" use of KH satellite materials, a follow-up of the ARGO exercise of last year.

3. noted that the President had been informed about the contents of the ARGO Report and the possibilities indicated therein, that the results were exploratory, and that follow-up was planned. The President approves of the course of action.

25X1

4. will write a letter to the participating agencies stating what he thinks purpose of committee is. He will say function is to: (1) collect and consolidate the views and needs of the "civilian agencies" for KH photography, (2) make these known to the intelligence community, and (3) discuss with the

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SUBJECT: ARGO Committee Meeting, 10 June 1968. Executive Office Building, Room 303, 1000 Hours

intelligence community procedures. The on-going KH intelligence resource can be made use of by the "civilian agencies" under the present rules and security restrictions and it is the purpose of the committee to consider in that light. It is not to be the committee's function to relieve the Agencies of the responsibility for establishing and justifying needs.

5. then briefly reviewed the follow-up projects suggested by the participating agencies in the Executive Summary of the ARGO Report, and in the Agencies' responses to Hornig's covering letter to that report. Discussion then went around the table.

6. of Transportation (Transportation was not a participant in the previous ARGO exercise) had queries on operations costs, aircraft vs. satellite; would like figures like "cost per square mile per feet ground resolution". said the committee should consider, but referred to NASA, which is forming a similar committee and which will be involved with cost. remarked that this committee will have its first meeting 16 June. One of its functions will be to consider the impact of the ARGO study.

7. briefly reviewed COMIREX organization and procedures for benefit of the group. He remarked on the recent experimental use of Bi-Color, said he would like to have their evaluation, and a briefing was suggested including types of subjects of interest to them which were covered. indicated that a briefing would probably be most advantageous to present after our preliminary technical studies were a little further along. indicated afterward that he would like to see an indication of areas covered given them, and it was agreed this would be followed by a briefing when feasible. We will have a graphic of potentially useable Bi-Color coverage available for the next meeting).

8. The Agencies then commented on their plans. for State/AID reviewed thinking to date and reported meeting with Lundahl last week. They will attempt to have a specific project formulated within three weeks, will check with NPIC as to whether coverage available. A question is whether to opt for historical or current study or combination was recommending

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former). for Agriculture (which will be involved in the AID Project) noted that "Agriculture does not now have a world mission", but the work envisioned "could generate such a mission, i.e., contributing to National Intelligence Estimates".

9. for ESSA noted their chief two areas of present interest were hydrology and oceanography, including snow-cover and sea-ice surveys. They would like to review more material. Noted that Index photography OK for cloud studies, may not be sufficiently good for sea-ice survey. At this point noted that ways and means of sanitizing and reducing classification of Index photography were being considered.

10. for USGS noted their planned use of KH material for (a) Antarctic mapping, and (b) updating land use maps (now ten years behind schedule) and urban maps (now 5 to 50 years old). For the latter, KH material would be used to determine which areas should be flown by aircraft and most economically get unclassified material.

11. described OEP's program designed for contingency use of KH materials, and indicated OEP will come to the committee with requests for coverage of U.S. cities not presently available.

12. summarized: In next six months the committee will have as its primary objective, a series of papers of proposed studies reflecting the operational requirements of the participating "civilian agencies". He emphasized that such specifics are a necessary first step for further action.

13. Next meeting, Wednesday, 10 July 1968, 1000 hours. DIA (for Foreign Base Line Mapping), AID/Agriculture, and Interior will present briefings.

Assistant to Deputy Director, NPIC

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[redacted] 25X1

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[redacted] 25X1

Assistant to Deputy Director, NPIC

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[redacted]

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10 July 1968

Copy 1

MEMORANDUM FOR: Assistant to Deputy Director, NPIC

SUBJECT: Peaceful Uses of Satellite Photography

One of our PIs, [redacted] has proposed two new suggestions for the peaceful uses of photography, which the ARGO Project might have an interest in. A copy of his memorandum of 10 July 1968 is attached.

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[redacted]
Chief, Imagery Exploitation Group
NPIC

Attachment:
Memo from [redacted] dated 10 July 1968

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Attachment to [redacted] 25X1

10 July 1968

MEMORANDUM FOR: Chief, Nuclear/Industrial Branch, SD/IEG

SUBJECT: Two Suggested Ideas for Peaceful Uses of Satellite Photography Program

1. Two ship borne expeditions have explored the sea off Hawaii to describe and to study successfully the migration of gigantic eddies 50 miles across, a wave length of 85 miles, and a movement of 22 miles per day. The eddies move in the current induced by its flow around islands according to von Karman's Law of Wake Effect. The eddies are said to bring up food fishes from the colder deeper waters. Similar eddies are said to be observed by cloud distribution in air currents flowing around mountainous tropical islands. Gigantic storm induced eddies have been observed on index camera photography off the Kurile Islands and the central Caspian Sea. A brief written description of the eddies is to be found in the Pacific Science Association Information Bulletin, vol. 20, no. 2, p. 45, April 1968, Unclassified.

2. An abstract of a Russian paper presented at a US meeting on the Physics of the Atmosphere, reports that hail studies were conducted during 1964-67 in Moldavia, USSR. More information on the time and place probably can be obtained from the manuscript possibly on file with the American Meteorological Society. If the ground facilities and field equipment deployment can be located on satellite coverage a comparison with US Air Force studies in Colorado and the Alberta Provincial Research Council might be of interest and value on severe weather modification studies. Source: American Meterol. Society, Bulletin vol. 49, no. 5, pt 2, p. 620, May 1968.

[redacted] 25X1

Nuclear/Industrial Branch,
SD/IEG/NPIC

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[For Presidential History Package]

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23 September 1968

Project ARGO

Interest in the "peaceful uses" of satellite photography by NPIC dates from 1960, when imagery was obtained by the first sucessful reconnaissance satellite. As photography accumulated and the state-of-the-art developed, there was recognition that, consistent with the restraints imposed by security, government departments and agencies other than those in the intelligence community should be aware of the product for its contribution to their background knowledge, and, potentially, to their special needs. In 1965, a committee acting under the auspices of the National Security Action Memorandum 156, in a review of national policy for satellite reconnaissance, recommended that measures be devised to give the "civilian agencies" controlled access to information from the satellite reconnaissance systems. In 1966, the Special Assistant to the President for Science and Technology took action to begin a formal study of the classified photography by the "civilian agencies", and with the approval of the Director of Central Intelligence and the Secretary of Defense, and in concert with the Departments of Agriculture, Interior, and Commerce, the Agency for Internation Development and the National Aeronautics and Space Administration, a plan was developed and Project ARGO began in July 1967.

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DRAFT

Project ARGO

A team of resource specialists from the participating agencies and representing the disciplinary interests of agriculture, geology, hydrology, geography, marine sciences, map products and engineering proceeded to investigate the photography from six camera types from four reconnaissance satellite systems in terms of the information content and usefulness to the participating agencies' needs. NPIC provided initial orientation for the team, material and technical assistance during the course of the study.

The results of the evaluation, published in February of 1968, recognized the potential of the material and suggested that some needs of the civilian agencies might be served as by-products of the present intelligence satellite collection systems. As a consequence, at the suggestion of the Special Assistant to the President for Science and Technology, and with the approval of the Director of Central Intelligence, the ARGO Steering Committee was established as a Standing Committee in June 1968, to (1) collect and consolidate the needs of the "civilian agencies" for photography from the current systems, (2) make these known to the intelligence community, and (3) discuss with the intelligence community procedures for the handling of the material. NPIC maintains a liaison representative to this committee and provides appropriate technical support.

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NATIONAL RESEARCH COUNCIL
NATIONAL ACADEMY OF SCIENCES NATIONAL ACADEMY OF ENGINEERING
2101 CONSTITUTION AVENUE WASHINGTON, D.C. 20418

November 15, 1968

Mr. Arthur Lundhahl
Central Intelligence Agency
Langley, Virginia

Dear Mr. Lundhahl:

The National Academy of Sciences has recently completed a comprehensive study undertaken at the request of the National Aeronautics and Space Administration of useful applications of earth-oriented satellites. The study was accomplished by panels of experts in communications, economics and the earth and environmental sciences and was under the general direction of [redacted] Chairman, and a Central Review Committee. 25X1

The study was accomplished at Woods Hole, Massachusetts during the summers of 1967 and 1968 and a one day briefing of the results was held there on July 31, 1968 for senior U.S. Government officials and members of their staff. In addition, an interim summary of the panel reports based on the work accomplished during the summer of 1967 has been issued. Volumes will be published towards the end of this year which will contain the final report of the Summer Study on Space Applications with complete details.

On Thursday, November 21, 1968 at the National Academy of Sciences in Washington, D. C. there will be a second presentation of the study findings. The briefing will last from about 9:00 am to 5:00 pm and will be held in the Lecture Room at 2101 Constitution Avenue, N. W. Subjects to be covered will include possible space applications in

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the fields of meteorology, hydrology, oceanography, forestry, agriculture, geography, geology, point-to-point and broadcast communications, navigation and traffic control, and possible data systems for receiving, handling, and distributing information gathered by remote sensors.

The one day briefing of the status and prospects of these rapidly developing fields will include the conclusions and recommendations of the Central Review Committee. Like the July 31 briefing it will be directed primarily to the senior staff of major departments and agencies of the U.S. Government which may have an interest in these applications of satellite technology and especially to those unable to attend the earlier session.

On behalf of [redacted] you are extended a cordial invitation to attend the briefing at the Academy on November 21, 1968. I would appreciate a reply in the near future indicating your plans and also suggestions concerning the attendance of members of your staff who are concerned with the topics to be covered. 25X1

Sincerely,

[redacted] 25X1

Executive Secretary
Committee on Remote Sensing
of Environment
Telephone 961-1516

ER:ds

Please call names of those who would like to attend To:

[redacted] 25X1

Ext 961-1516

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PROGRAM

Summary Briefing

SUMMER STUDY ON SPACE APPLICATIONS

Thursday November 21, 1968
The Lecture Room, National Academy of Sciences
2101 Constitution Avenue, N. W.

9:15 am Welcome and Introduction

[redacted] Study Chairman 25X1

General Objectives and Status

[redacted] 25X1

Areas of Application

[redacted] 25X1

Information Systems

[redacted] 25X1

Technical Application

[redacted] 25X1

12:30 pm Lunch - may be purchased in the Academy Refectory

1:30 pm Future Opportunities

[redacted] 25X1

National Considerations

[redacted] 25X1

International Considerations

[redacted] 25X1

Summation

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5 June 1969

MEMORANDUM FOR THE RECORD

SUBJECT: Meeting of the Steering Committee/ARGO
Room 208, EOB, 3 June 1969

1. opened the meeting for the briefing planned on the attached agenda. conducted the briefing. He noted that they had not costed out the support from intelligence although he felt that someday the civilian agencies would have to pay for imagery. noted that the briefing returned to air-borne platform SR-71 and he questioned who concurred that SR-71 imagery could serve as guide for U-2 imagery.

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2. presented a series of speakers supported by slides. Although their comments are to be found in the written report by the ~~Air~~ Marine Sciences Working Group ~~report~~, the highlights are as follows:

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a. , US Navy Oceanographic Office, set forth applications for:

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--Coverage of inaccessable atolls
--Coastal charting revisions
--Red Sea high and low tide charting and water depths
--Ice flow chart for arctic navigation
--Glacier and iceberg surveillance (shipping lanes)
--Coastal and undersea (Red China) topography
--Harbor and urban planning--Vladivostock
--Water pollution analysis--Sault St. Marie, plus air pollution analysis based on color of roof tops
--Offshore oil pollution--Santa Barbara

noted that the group had concluded that a wealth of data was contained in classified imagery and needed tapping.)

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b. Marine Science Council, presented individual general requirements for Agriculture, Commerce, Interior, and Transportation and summarized them. He pointed out that the report is not a request to the intelligence community as the

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SUBJECT: Meeting of the Steering Committee/ARGO
Room 208, EOB, 3 June 1969

general requirements must be tailored to specific agency needs.

c. made a final wrap-up pointing out:

--Many of the individual agency requirements were the same or similar and were truly interdepartmental in nature. (He used the term "national".)
--Present systems are limited for use in catastrophies.
--Can start a mini-program for use of imagery if agencies would now put 20 people each into the effort (with clearances).
--Reston has room to use for this purpose.
--Would like non-USIB representation in sanitization.
--ARGO Steering Committee should be point of contact with intelligence community on requirements.

3. ended the meeting with these points:

--Agencies should help in sanitization.
--Agencies must translate general requirements into specific requirements.
--If agencies can't commit people to the effort it opens their requirements priority to question in his mind.
--Recognized the problem of specific requirements best handled in field, but most of such people were uncleared.
--Next step is briefing of and selected personnel.

4. The next meeting will be 9 July 1969 at 0930, Room 208, EOB. There will be a briefing on use of KH-4 material in engineering studies on canals. There will also be a similar ~~meeting~~ briefing on roads.

NPIC/PPBS

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N.B. BEFORE CLOSE OF MEETING BOARD APPROVAL OF THE COMMITTEE TO DESTROY THE BRIEFING BOARDS AND PANELS WHICH HAVE BEEN [illegible] AT NPIC [illegible] THE ARGO SYMPOSIUM [illegible] NPIC [illegible] DOES NOT APPLY TO VU-GRAPHS OR AGAINST USE

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EXECUTIVE OFFICE OF THE PRESIDENT

OFFICE OF SCIENCE AND TECHNOLOGY

WASHINGTON, D.C. 20506

May 27, 1969

MEMORANDUM FOR

ARGO Steering Committee

You are reminded that the next meeting of the Committee will be held at 9:30 a.m. on June 3 in Room 208 of the Executive Office Building. The primary agenda item will be a briefing by the Marine Sciences Working Group on its recent report.

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Chairman, ARGO Steering Committee

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11 July 1969

MEMORANDUM FOR THE RECORD

SUBJECT: Meeting of the Steering Committee/ARGO, Room 208, EOB, 9 July 1969

1. The Corps of Engineers presented a briefing on:

Indiana Roads Project - Done on contract by the state of Indiana from conventional sources. Corps of Engineers used KH-4 photography. Enlarged photos to 1/30,000 for optimum use. The 1/30,000 set certain limits which could be bettered (meaning additional detail and information could be obtained). Using KH-4 Corps of Engineers found Indiana State plan with conventional sources was in 11.5% average error (example, in cut-and-fill problems).

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Barge Canal from Lake Michigan to Wabash River - Project all based on satellite photography and not field-checked. Cost advantages over conventional sources.

Both projects showed many advantages of satellite photography. Better mosaics with photos taken at one time--same geometry and conditions. No trouble matching strips, frames, etc.,--cheaper. More engineering data available.

2. Reston - representative stated KH-4 provided more than needed in detail for 1/250,000 domestic maps.

3. Security - much discussion about how one can and cannot get information out from classification "barrier".

4. Department of Transportation - representatives stated that they had levied requirement through military for coverage by classified equipment in support of oil tanker S.S. Manhattan route through ice to Prudhoe Bay (No. Slope Alaska). They will levy same requirement upon civilian channel /ARGO to /COMIREX). accepted requirement for consideration. (Parallel copy of requirement goes to NRO for planning support.)

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SUBJECT: Meeting of the Steering Committee/ARGO, Room 208, EOB, 9 July 1969

5. Contract - To be NPIC administered? said that while he was pleased with first year's accomplishments in getting collection, he considered that more progress must be made on usage. He proposed to that the intelligence community and CIA consider that NPIC administer a contract with on behalf of Agencies obtaining coverage and needing analytical exploitation support. Money to be provided by Agencies to and transferred to NPIC. Proposal will probably be made when and if Agencies advise (Secretaries to) that they are willing to commit some funds to a single contract. At that time (in two or three weeks) NPIC will probably hear via of the request. We will then be in a position to ascertain cost, security problem, wisdom, need for 1080 reimbursement for NPIC's expenses, etc., of request. stated he was sure Art Lundahl would okay.

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6. Next meeting - 10 September 1969, Wednesday, 0930.

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25 August 1969

Copy 3

MEMORANDUM FOR THE RECORD

SUBJECT: Steering Committee/ARGO Meeting, 9 July 1969

1. [redacted] and I attended a meeting of the Steering Committee/ARGO on 9 July 1969. The meeting was held in Room 208 of the Executive Office Building. This memorandum is a report of that meeting. 25X1

2. [redacted] of the Army Corps of Engineers began the session by introducing a briefing on the Indiana and the Wabash River Canal projects. The Indiana project was an exercise assigned to the Army Corps of Engineers in an attempt to determine whether KH-4 photography provides sufficient information for the initial planning of road and airfield locations. Utilizing a photo-mosaic of the area under consideration, the Corps of Engineers proposed two probable road routes and three airfield locations. Ground truth compiled from conventional sources by the State of Indiana confirmed the applicability of these routes and locations. The usability of satellite photography for the initial planning of such construction was thereby verified. 25X1

The second project presented, "The Wabash River Canal Study," utilized KH-4 coverage to determine the feasibility of constructing a barge canal connecting Lake Michigan with the Wabash River. Through the use of a photo-mosaic compiled from KH-4 coverage it was determined that six problems exist which make the construction and use of the proposed canal impractical. The major problem confronting the canal proponents is the lack of an adequate source of water required for canal operation. Thus, it has been determined that the canal is not feasible and the project should be abandoned. A problem, however, arises from the fact that, although the feasibility study has been acomplished, security restrictions permit disclosure of only the conclusions of the study. Congressional proponents of the Canal Project would naturally challenge these conclusions and since the Army Corps of Engineers cannot release the source of the data or methods employed for reaching the stated conclusions, the conclusions in themselves are of little value. Thus, although the outcome is already known, the study is being re-done by conventional means in order that the conclusions can be re-formed from a public documentable source. It is unfortunate that funds and manpower must be expended to reach a foreknown end but it is hoped that the major effort will be employed in documenting the known problems

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thereby still effecting some manpower savings. A nine page extraction from the ARGO Steering Committee briefing on this study is included as an attachment to this paper.

3. The problem of classification was next discussed. Dissemination, to the public, of information gained from the use of satellite photography is faced by all committee members. Cleared personnel using classified materials as an information source are often required to substantiate their decisions and judgements to uncleared planners and engineers. Since the information source cannot be disclosed, substantiation is difficult. In this regard, congressmen, who by nature require proof of information derogatory to their pet projects, prove to be the Peaceful Uses Committee's worst enemy. It was mentioned that, in an attempt to eliminate this problem, a reconstituting machine is presently under development. This piece of gear will have the capability of altering the appearance of satellite imagery regarding scale, size of format, coverage per format, shadow direction, etc. Thus, many of the parameters which disclose the actual source of the photography will be changed to simulate that accomplished by conventional means. It was indicated, however,that other clues, such as vast amounts of coverage within the same time frame which indicate other than the conventional sources, continue to be a problem.

Though it would seem that the classification aspect would tend to dampen the use of satellite coverage for civilian needs, the cost savings afforded by its use makes the problem bearable. It was estimated that the cost savings afforded by the use of satellite coverage over conventional aerial coverage was in the realm of 200 to 1. This savings is based strictly on usage since the satellite coverage is provided to the various users at no charge. If the users were required to share in the cost of the satellite program to obtain their needed coverage, the figures might be somewhat different. It was suggested in fact, that possibly civilian users of satellite coverage be charged for their usage and thus, somewhat reduce the reconnaissance costs of the Intelligence Community. Most members of the Peaceful Uses Committee were not too favorably impressed by this suggestion.

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SUBJECT: Steering Committee/ARGO Meeting, 9 July 1969

4. [redacted] presented the Manhattan Tanker Project. This is a study to determine the feasibility of transporting oil from Alaska to the U.S. Mainland on a year around basis via the Northwest Passage across the top of the North American Continent. The appropriate ship for such a route is a combination tanker/ice breaker. The ship chosen for this test was the tanker S.S. Manhattan, presently the largest tanker in the U.S. Fleet. The S.S. Manhattan is now undergoing a modification which consists of adding an ice breaking bow. It has been calculated that once underway the S.S. Manhattan will be capable of breaking ice with a thickness of six to eight feet in a continuous mode and up to 50 foot thickness in a ramming mode. An attempt will be made to skirt areas of ice with a thickness of over 50 feet. To locate these areas, aerial surveillance of the route has been requested. Two flights per week are required for the forecasting of the ice ridges along the planned route. Support will be furnished by the U.S. Coast Guard employing conventional reconnaissance aircraft. Covert use of the SR-71 aircraft is also planned to obtain a more extensive/accurate data base than can be provided by the overt Coast Guard sources. [redacted]

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[redacted]

Since a portion of the Manhattan's voyage will transverse Canadian waters and surveillance aircraft will penetrate Canadian air space, cooperation with Canada on this project is imperative. The S.S. Manhattan will be advised of problem ice areas ahead of her as detected from the aerial photography and her route adjusted accordingly. The data will also be utilized to form a base for future studies of the static and shifting ice conditions in these waters. To provide additional photography of the route area, satellite coverage has been requested and will be obtained if a mission is flying during the voyage of the Manhattan and targeting/operational conditions make it possible. Should satellite coverage be obtained, NPIC support of this project may be requested.

A successful voyage of the Manhattan will establish the precedent for year around use of this shipping lane and the need for additional tanker/ice breakers. A second tanker/ice breaker twice as large as the S.S. Manhattan is already on the drawing board and will be constructed if this route proves favorable. At present the sailing date set for the S.S. Manhattan is the end of July 1969.

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SUBJECT: Steering Committee/ARGO Meeting, 9 July 1969

5. [redacted] introduced the idea that the Peaceful Uses Committee member agencies contribute funds to be used for payment of a contractor who would provide support on the various Peaceful Uses projects. He further proposed that the contract, thus established, be open ended and that [redacted] be the contractor chosen. [redacted] seems to be in good stead since the contractor selection appeared favorable to everyone present, however, the idea of contribution funding met opposition due to the present economic situation of all Government agencies involved. [redacted] stated that [redacted] had been proposed as the contractor because of its proven capability, close association with the reconnaissance community, prior use of satellite photography and clearance level of employees. The additional suggestion was made that NPIC is in the best position to provide some degree of contract monitorship and also to supply mission information and materials to [redacted] This would be a very workable arrangement since NPIC personnel are already familiar with [redacted] employees and procedures. The political aspect, however, of a defense/military agency being associated with civilian planning, research, etc., is undesirable. In any case, we must wait to see if the necessary funding is forthcoming, a supporting contract is approved, [redacted] is the contractor selected and NPIC is asked to participate in the program.

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6. The privilege of attending this meeting proved to be extremely valuable to the author regarding civilian usefulness of satellite photography.

I have become more appreciative of the problems involved with utilizing a covert information source for overt activities. It has become evident to me that the available information and data base provided by satellite photography is of definite value to civilian enterprises for planning and engineering in such areas as agriculture, conservation, transportation, urban renewals, etc. Continued attendance to the Peaceful Uses Committee meetings will enable the APSD representative to become more knowledgable in the efforts of the committee and its members and thus be better prepared to offer assistance pertaining to the technical aspects of the systems involved.

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[redacted]

SYSTEM ONLY

Section I
Image Evaluation Branch
APSD/TSSG/NPIC

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SUBJECT: Steering Committee/ARGO Meeting, 9 July 1969

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NOTE

The following nine pages were extracted from a briefing given to the ARGO Steering Committee, 9 July 1969.

Six of these pages contain the markings "THIS DOCUMENT MAY NOT BE RELEASED TO CONTRACTOR ORGANIZATIONS OR PERSONNEL WITHOUT PRIOR APPROVAL OF ENGINEER STRATEGIC STUDIES GROUP, OCE."

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MISSION

The Special Engineering Division is responsible for feasibility studies of major military engineering undertakings, especially base development, in support of war plans, contingency plans, and other DOD programs. In preparing these design studies the Division develops and uses new techniques embracing photogrammetric and photointerpretation applications to natural and environmental sciences. In accomplishing these functions, the Division:

(1) Develops improved analytical methods, and recommends equipment changes to support engineering studies of proposed engineering projects through the use of photogrammetry.

(2) Develops, compiles, and disseminates engineering studies pertaining to selected geographic areas throughout the world, identifying those aspects of the environment (soils, geology, hydrology, ecology, and climatology) that bear on military operations, particularly mobility, in the area.

(3) Produces and disseminates engineering design studies for base development and other military engineering requirements in selected areas throughout the world, developing construction requirements in terms of facilities and installations, identifying engineering troop and material resources, and establishing construction schedules for completion of the construction tasks in concert with proposed time-phasing of troop deployment in support of military operations.

(4) Provides assistance to Theater Commands and Department of Army staff elements (DCSLOG, DCSOPS) in the preparation of engineering studies, contingency and operation plans, or other staff studies.

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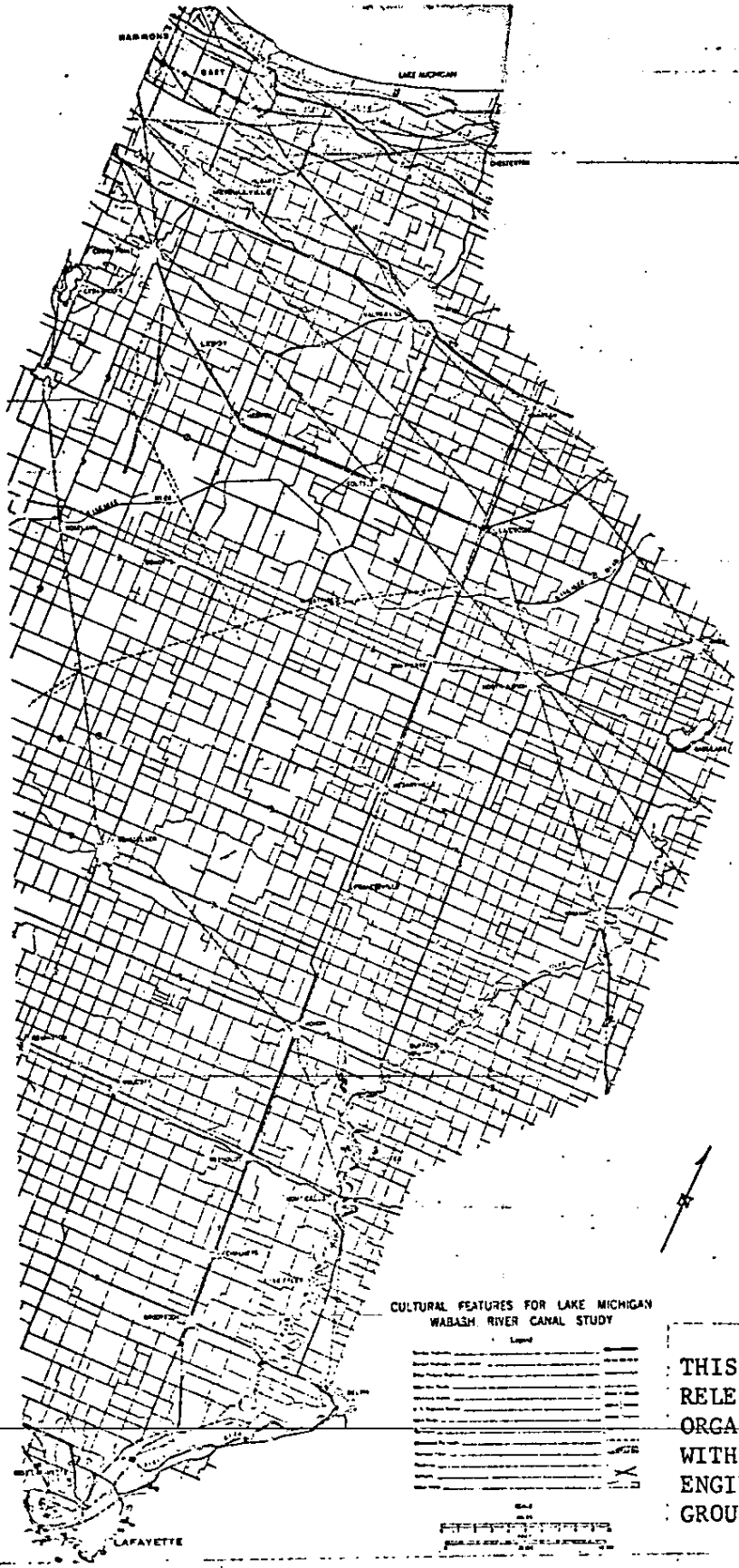

CULTURAL FEATURES FOR LAKE MICHIGAN
WABASH RIVER CANAL STUDY

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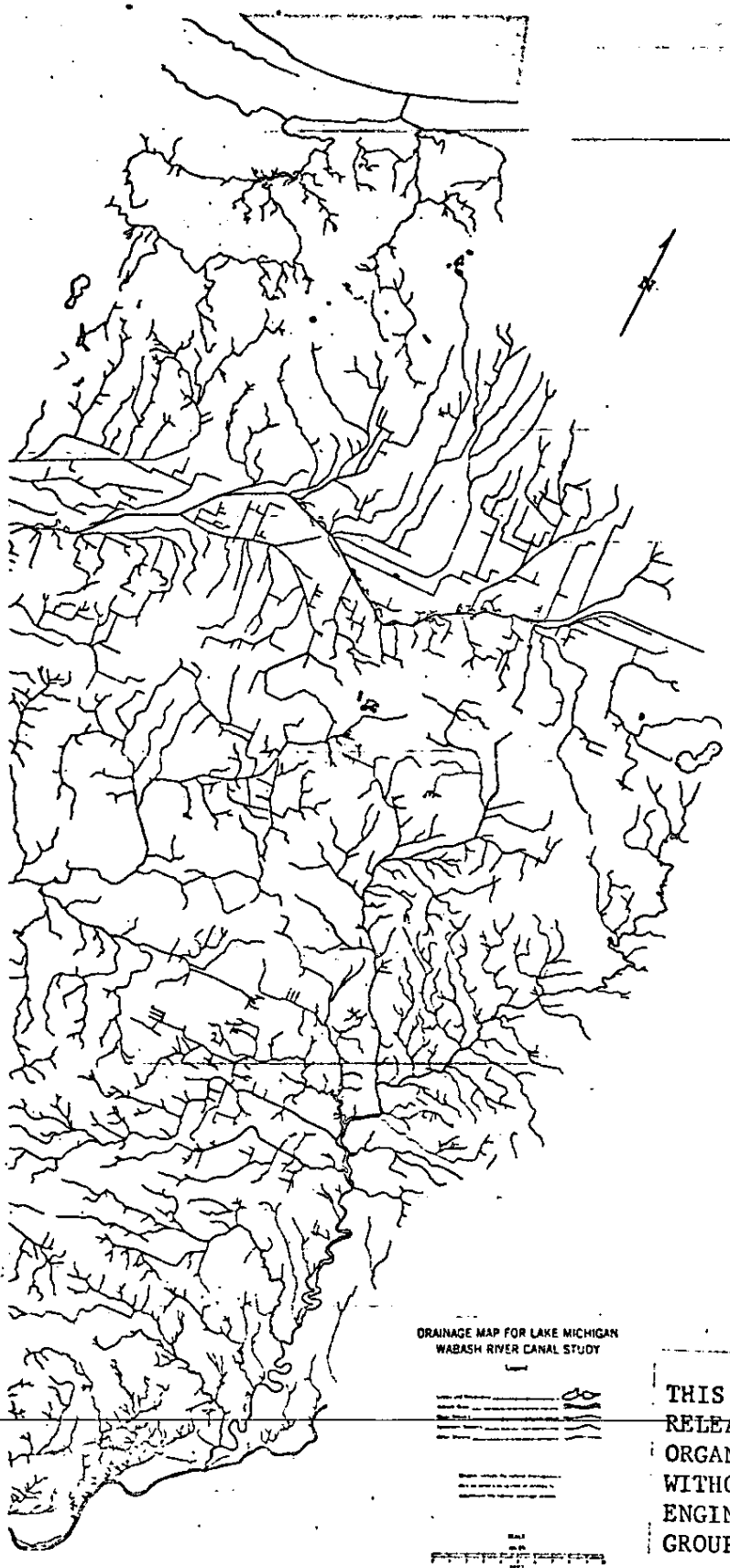

DRAINAGE MAP FOR LAKE MICHIGAN
WABASH RIVER CANAL STUDY

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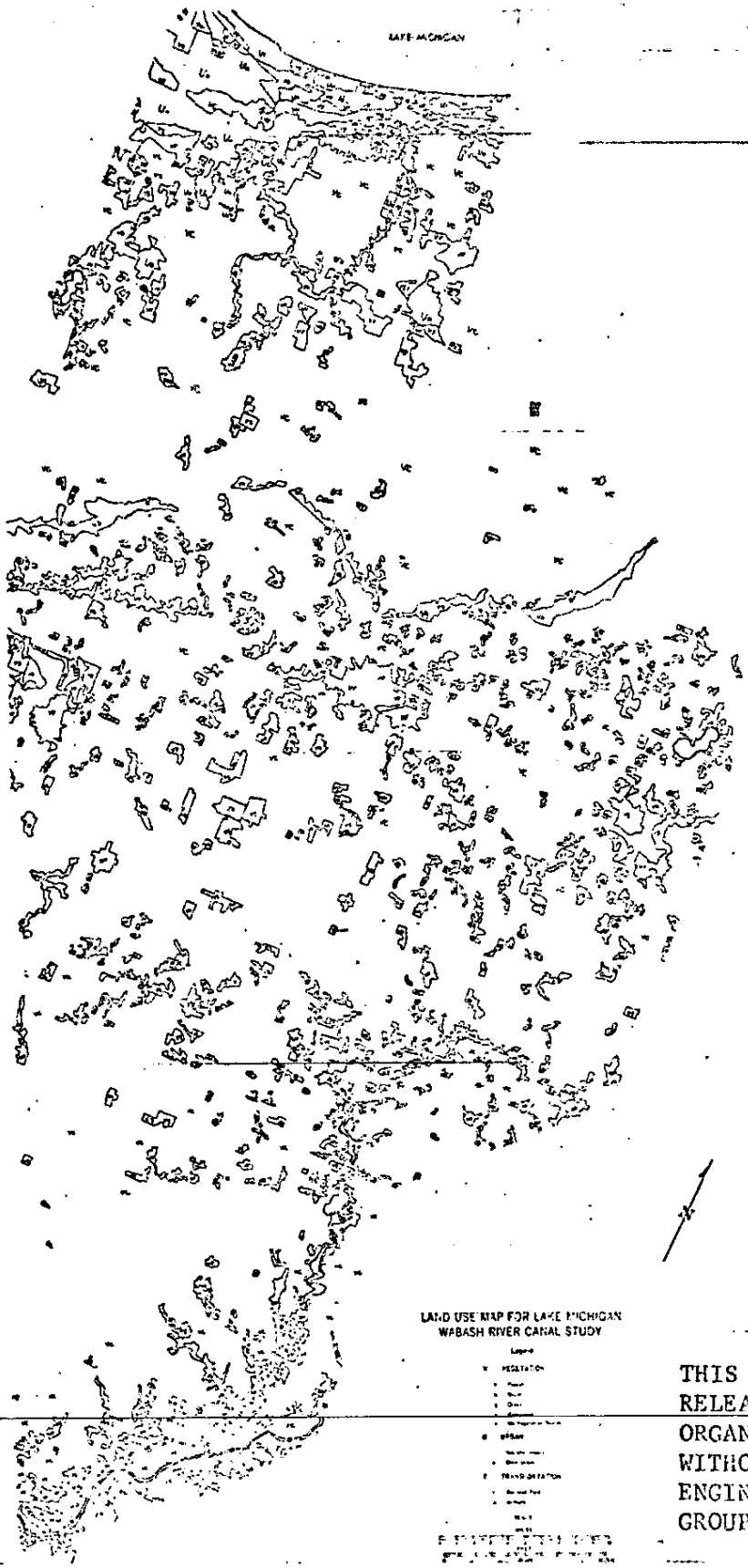

LAND USE MAP FOR LAKE MICHIGAN
WABASH RIVER CANAL STUDY

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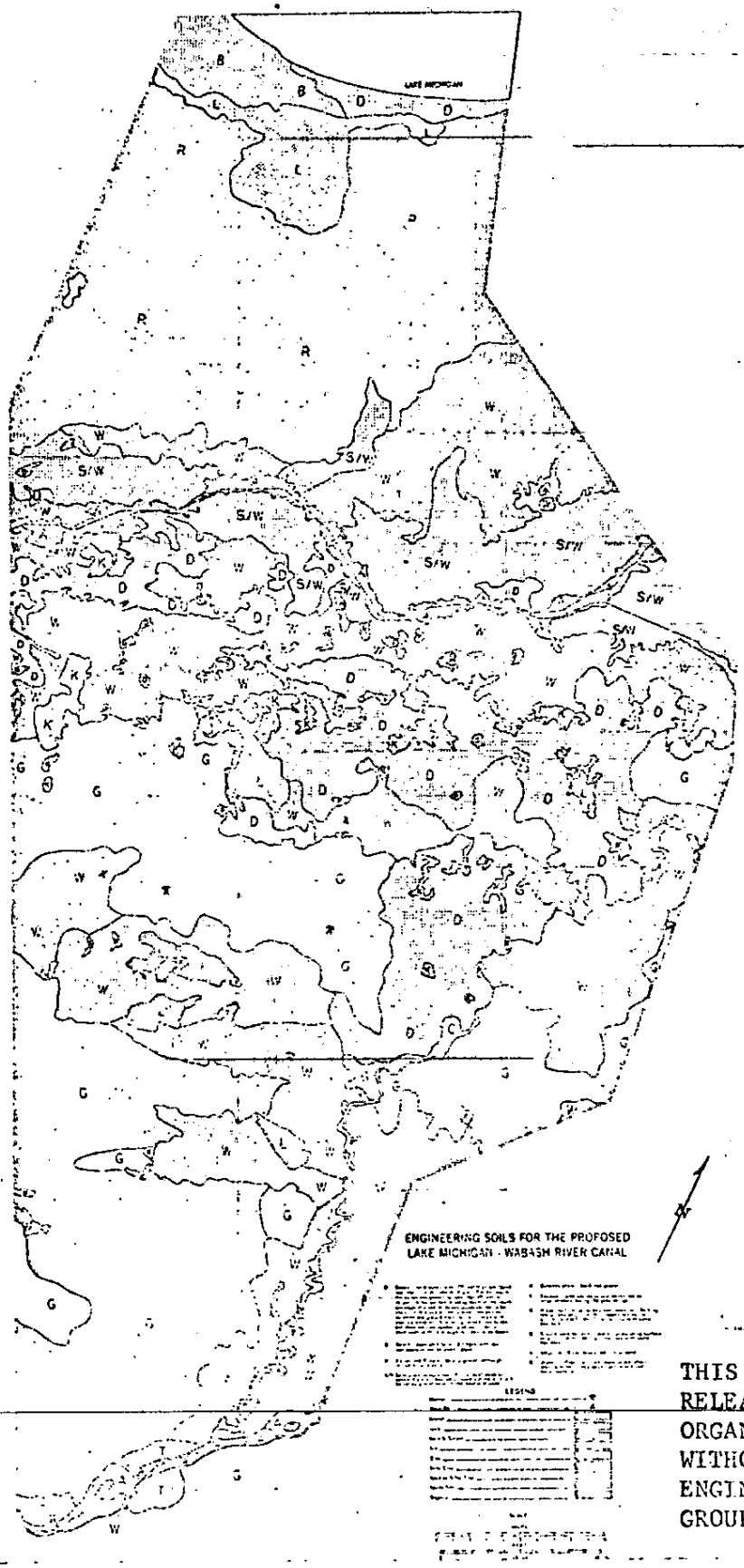

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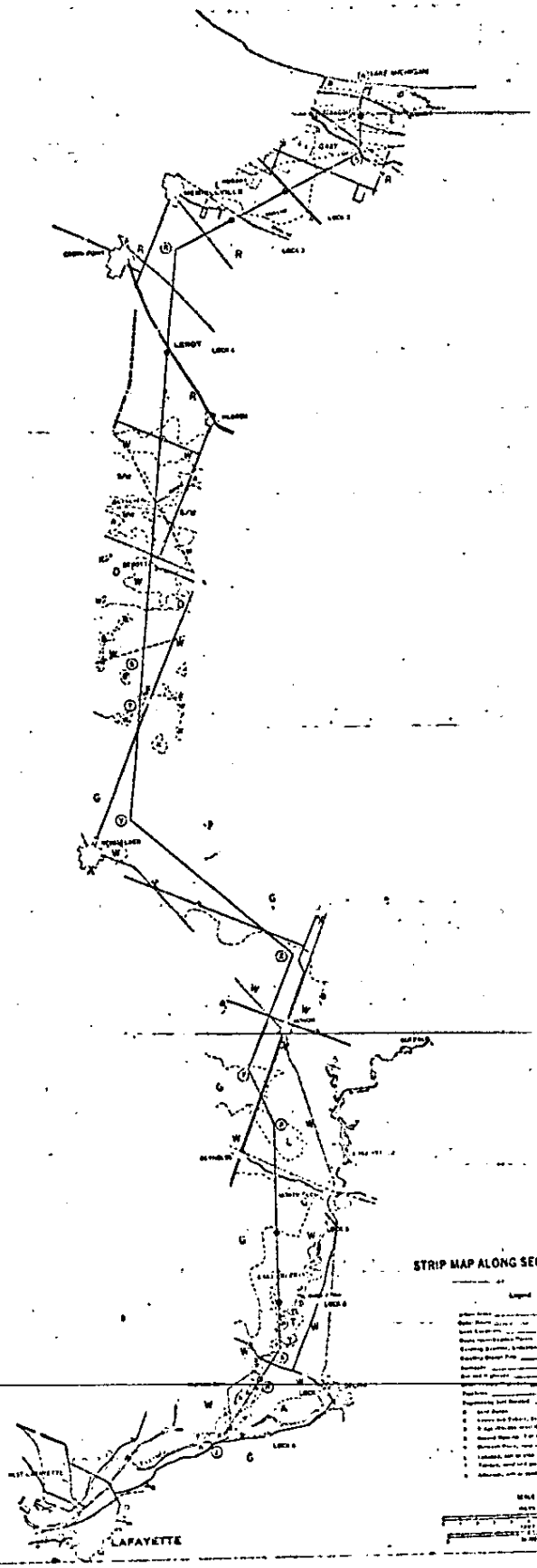
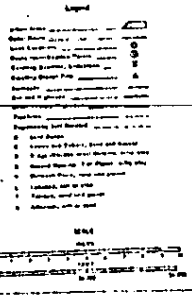


STRIP MAP ALONG SELECTED ROUTE



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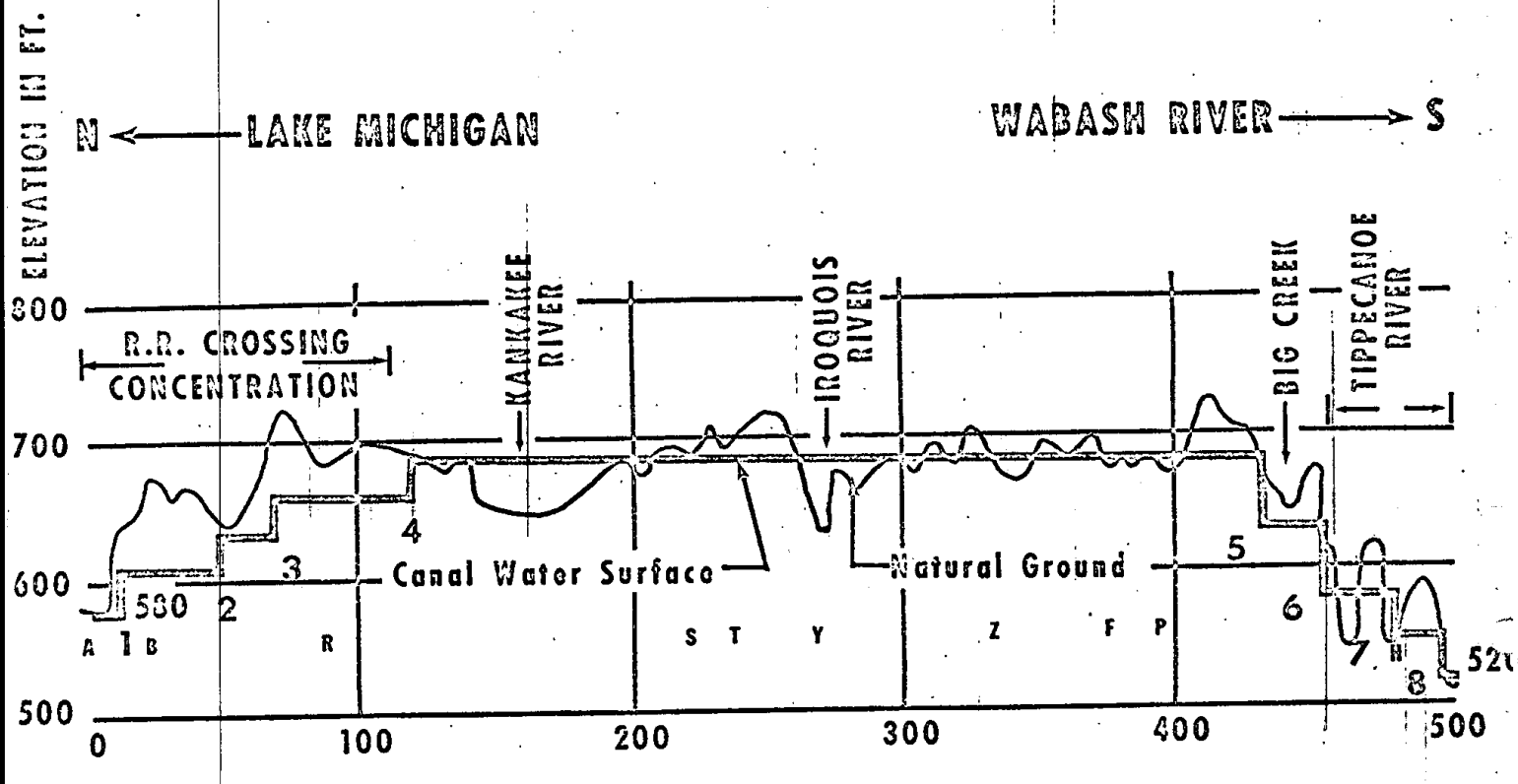
PROFILE OF CANAL ROUTE



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MAJOR PROBLEMS

- INTERRUPTION OF TRANSPORTATION
- EXTENSIVE LAND USE
- SOURCE OF WATER FOR OPERATION
- FEW GOOD WATER STORAGE SITES
- SEEPAGE IN EXTENSIVE AREAS OF GRANULAR SOILS
- CROSSING THE KANKAKEE RIVER

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NPIC/TSSG/RED-1871/69
21 October 1969

MEMORANDUM FOR: Chief, Planning, Programming & Budgeting Staff, NPIC

ATTENTION: [redacted] 25X1

THROUGH: Chief, Technical Services & Support Group, NPIC

SUBJECT: Technical Representative to ARGO

1. It is requested that [redacted] be assigned to attend ARGO meetings as a technical assistant. [redacted] is keenly interested and enthusiastic in the efforts related to the ARGO program. His knowledge of reconn systems, operational parameters, and system sensors, plus his experience in cartography, photogrammetry, earth sciences and oceanography, will make him a valued assistant during meeting deliberations. 25X1 25X1

2. Additionally, many of the exploitation parameters associated with ARGO objectives are closely related to NPIC research and development programs and, as such, should be judiciously monitored and evaluated to avoid duplication of effort in the development of exploitation instrumentation and techniques. [redacted] presence at ARGO meetings would add to the reciprocal exchange of technical information between ARGO members and NPIC R&D efforts. 25X1

3. The above has been coordinated with [redacted] 25X1 25X1 25X1

[redacted]

Chief, Research & Engineering Division,
TSSG/NPIC

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TSSG/APSD/IEB-041/69
26 November 1969

MEMORANDUM FOR THE RECORD

SUBJECT: Steering Committee/ARGO Meeting, 1 October 1969

1. [redacted] and I attended a meeting of the Steering Committee/ARGO on 1 October 1969. The meeting was held in Room 208 of the Executive Office Building. This memorandum is a report of that meeting. 25X1

2. The Department of Agriculture representatives presented an up to date report of their underflight program. The program consists of eight multi-sensor flights during the growing season of the Imperial Valley. Seven flights, beginning in April, have been flown with the last one scheduled for late October. Ground truth color photography (Ektachrome) was acquired in conjunction with each flight to record the crop growth level at that point in the growing season. Thus far, only two of these missions have been processed and printed. The major delay toward completion lies with the low priority given this project. [redacted] 25X1
[redacted] indicated that he may be able to expedite work on the backlogged missions if the following questions were answered. 25X1
Can the number of reproductions be reduced? He wondered if each recipient needed entire copies or could they request specific segments for reproduction if the material was numerically indexed. He also inquired if each recipient had the capability, equipment and personnel to utilize all of the material simultaneously or if it is possible to share copies between groups. The answers were not readily available but it was said they would be provided by phone to [redacted] CIA, gave a brief 25X1
presentation of his efforts in support of the underflight program and some additional data of similar studies being sponsored by CIA.

3. The USGS informed the committee of the successful passage of the S.S. Manhattan through the Northwest Passage to Alaska. The planned surveillance support of this venture with SR-71 aircraft flights did not materialize because of the cost and risk involved. Future surveillance support of these Northwest Passage voyages may

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TSSG/APSD/IEB-041/69

SUBJECT: Steering Committee/ARGO Meeting, 1 October 1969

be provided by U-2 aircraft.

4. [redacted] OEP, presented some data concerning the usability of photographic coverage of the Camille disaster area. He had received a huge volumn of photography from numerous sources covering the gulf coast area. Studies of the photography were still being made but estimates of the damages can readily be made. Attached is a copy of his preliminary report, but the reproductions made from the photo illustrations are very poor. 25X1

5. The meeting closed with a proposed date of the next meeting set for 25 November 1969 (since changed to 9 December 1969). A tentative agenda was also stated to include a short briefing on the new S0-242 color emulsion by NPIC representatives. The meeting was informative, interesting, but confusing to me since my attendance was on short notice and my background knowledge to the functions of the ARGO Steering Committee quite limited.

[redacted] 25X1

NPIC/TSSG/APSD/IEB/Sec II

Distribution:
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Attachment to
TSSG/APSD/IEB-041/69

HURRICANE "CAMILLE"

An Appreciation of the Damage As Interpreted from Aerial Photography

by

[redacted]

Resource Evaluation Division
National Resource Analysis Center
Office of Emergency Preparedness

25X1

August 29, 1969

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ACKNOWLEDGEMENTS

Grateful acknowledgements are extended to the following individuals and organizations for their assistance in the preparation of this study and without whose cooperation it would not have been possible:

[redacted] and his enthusiastic staff at the U. S. Geological Survey, Special Projects Office, Reston, Virginia, for their support in providing photographic and related technical support as well as working facilities; 25X1

[redacted] Office of Science and Technology, Executive Office of the President, for his forthright and prompt efforts in acquiring from the U. S. Topographic Command, the photographic imagery of the Camille disaster areas; 25X1

[redacted] Earth Resources Program, NASA Headquarters, and to other individuals there and at the NASA Manned Spacecraft Center, Houston, for initial efforts and "alerts" as to availability of Camille imagery; 25X1

[redacted] Emergency Operations Office, Corps of Engineers, U. S. Army, for his efforts leading to the acquisition of this photography; 25X1

And to others in OEP, USGS, the Department of Agriculture whose encouragement and support has been most helpful.

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FOREWORD

As the media reports became available describing the extent of the devastion along Mississippi coastal areas and initial uncertainties as to details and specifics, it was almost a "reflex" to make inquiries as to: (a) existence and availability of aerial coverage of the area involved, and (b) requirements placed by OEP or other Federal agencies for such coverage. As an indication of similar concern, several inquiries had been received by the author during this period from Federal and private sources as to the need for and the existence of coverage.

Our first formal inquiries starting August 25 were discouraging, indicating uncertainty as to availability and requirements for same. Fortunately, these initial reports were unfounded. Further information revealed that indeed the Corps of Engineers had requested area coverage of the U. S. Air Force, presumably for area surveys, engineering works applications, rehabilitation, and relief purposes. By August 26, it had been determined that a complete set of the coverage was in Washington at the U. S. Topographic Command. Also, that NASA, Houston had utilized its Earth Resources Aircraft to flying over the area with a variety of sensor equipment (color, color infra red, and black and white photography). Steps were taken to gain access to the Corps of Engineers coverage as well as the NASA imagery. By Wednesday morning, August 27, a complete set of duplicate positive film (20 cans) had been delivered to the USGS facility at Reston, Virginia for use by those Federal agencies with needs so to use it. Similar arrangements were made to acquire copies of the NASA film. Arrangements were then made to view the material at Reston. By close of business August 27, a selection of the photo exposures for annotation and enlargement, and an initial interpretation of major damaged areas had been accomplished.

The principal purpose in presenting this study, preliminary as it is, is to demonstrate a quick reaction capability that is available to those Fed State and local agencies with the need for it. As these agencies are sudd confronted with disaster management problems of great magnitude, one of their earliest requirements is for definitive information. The aeri photographic medium is a source of information which is capable of much of this needed information and in a fairly rapid time sense.

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In this spirit the following illustrated report was undertaken. It does not attempt to present a detailed analysis of area or local damage effects. Several areas were chosen for analysis and illustration. Much more damage than described was visible in the photography and therefore reportable. For example, the residential areas in Gulfport and Pass Christian selected for annotation, represent large and very obvious areas of contiguous damage. Adjoining areas along the water front and further inland had suffered almost equally from the severity of flood waters and wind. More detailed interpretation would develop these areas as well.

Photographic Notes:

USAF coverage: Mission Camille, August 21, 1969, scale: approx. 1:27,000.

NASA coverage: (Not yet available at this writing.) Flown August 19, 20, 1969; several missions; high and low altitudes; coverage with black and white, color

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Gulfport, Mississippi — Exhibit A

Gulfport Harbor Area — Exhibit A-1

Note: 1. (3) beached ships - 450 ft - 490 ft length

2. Breakwater and yacht basin - breached dolphins and piers; absence of small boats.

3. Damage and destruction of buildings on wharves and piers. Roughly 15-20 warehouses and other buildings damaged or destroyed.

Residential Area — Exhibit A-2

Beach front residential area 1-2 miles in length with almost complete destruction of housing.

U. S. Naval Reservation — Exhibits A-3, A-4

6 large warehouse buildings (550' x 110') almost totally damaged

4 warehouses (230' x 90') destroyed

17 warehouses (185' x 40') severely damaged

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Pass Christian, Mississippi — Exhibit B

From the photographs, it would appear that this small town along the gulf-front was almost completely washed out. Dwellings have been washed away or from foundations and deposited considerable distances away; barges are observed 1-2 miles inland, etc.

Residential Section — Exhibit B-1

An area of major destruction. Of more than 200 buildings previously standing, about 1/2 appear to have been destroyed.

Highway Bridge — Exhibit B-2

Highway Bridge about 2 miles north of Pass Christian crossing Bayou Portage, was partially damaged. One span is out and damage is visible on another.

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Remarks

The foregoing interpretation report is very cursory. As noted in the foreword, it attempts to demonstrate graphically the wealth of information in the aerial photographic imagery that is available to disaster managers, and to indicate the relative facility and rapidity with which data can be developed.

The extraction of information presents little or no problem save that required to assemble photographic interpreters and to put them to work analyzing the photography. Upon receipt of disaster coverage of an area of this magnitude, an information report could be ready for dissemination within an hour or two. Follow-up detailed reports, somewhat longer. Photographic interpretation skills are readily available within the Federal establishment in the Washington area. They are available to a lesser extent at State and local levels within regional and other offices of USDA, USGS, Corps of Engineers and others. It becomes a matter of delineating the work needed and getting it underway.

Perhaps the two most pointed observations to be made from this study are:

1. The almost uniform interest, cooperation and support in making the fullest use of aerial photographic and other sensor imagery under the disaster conditions created by Camille.

2. The apparent lack of a visible and coordinated effort to develop uniform requirements for disaster aerial surveys; to report on the availability of same; and the generation of a common requirement for the information contained therein.

It is noteworthy that elements of the Federal establishment accustomed to utilize photographic survey information are currently discussing the establishment of formal procedures for future use in this connection. It is the opinion of the author that OEP should provide the coordination element.

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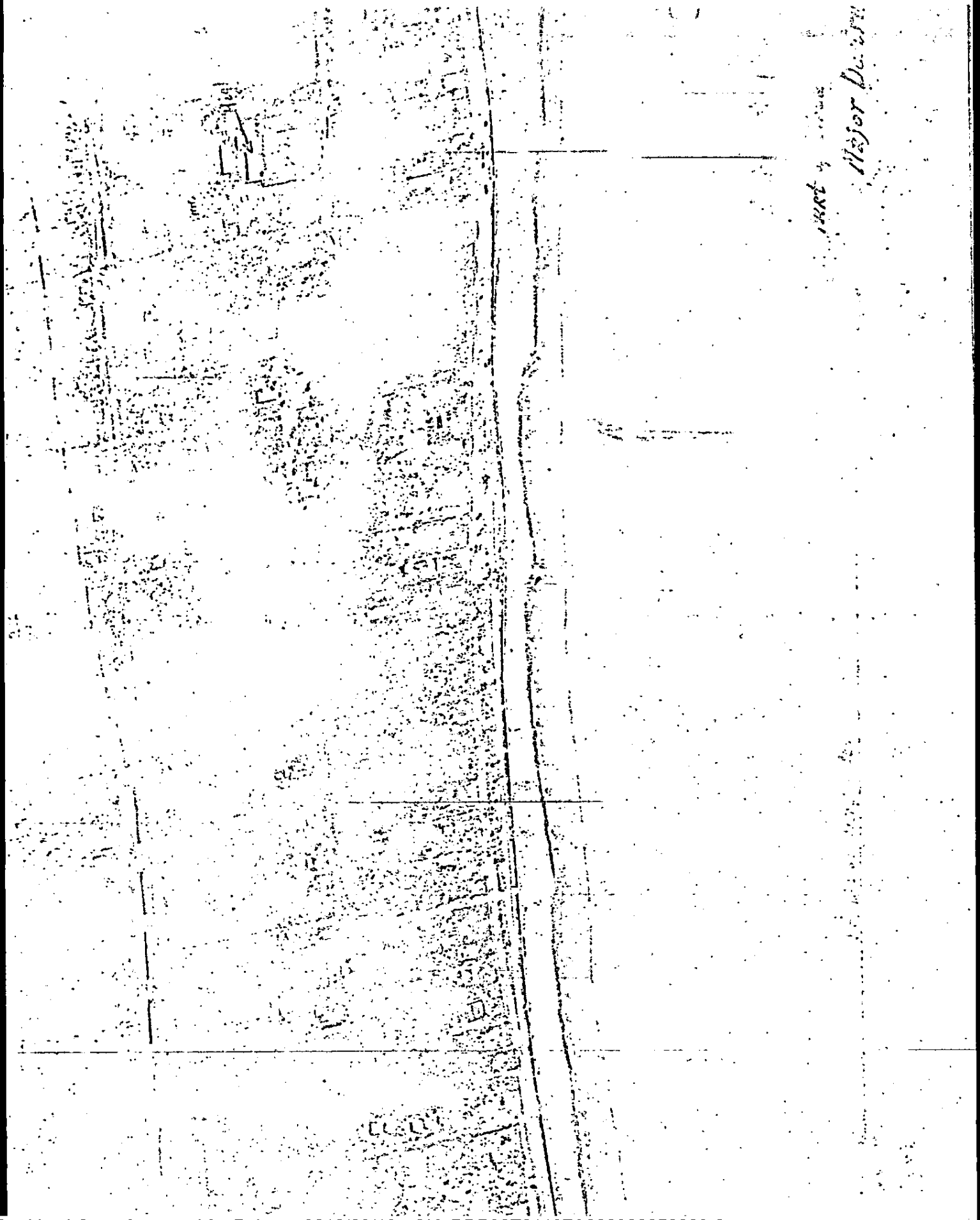

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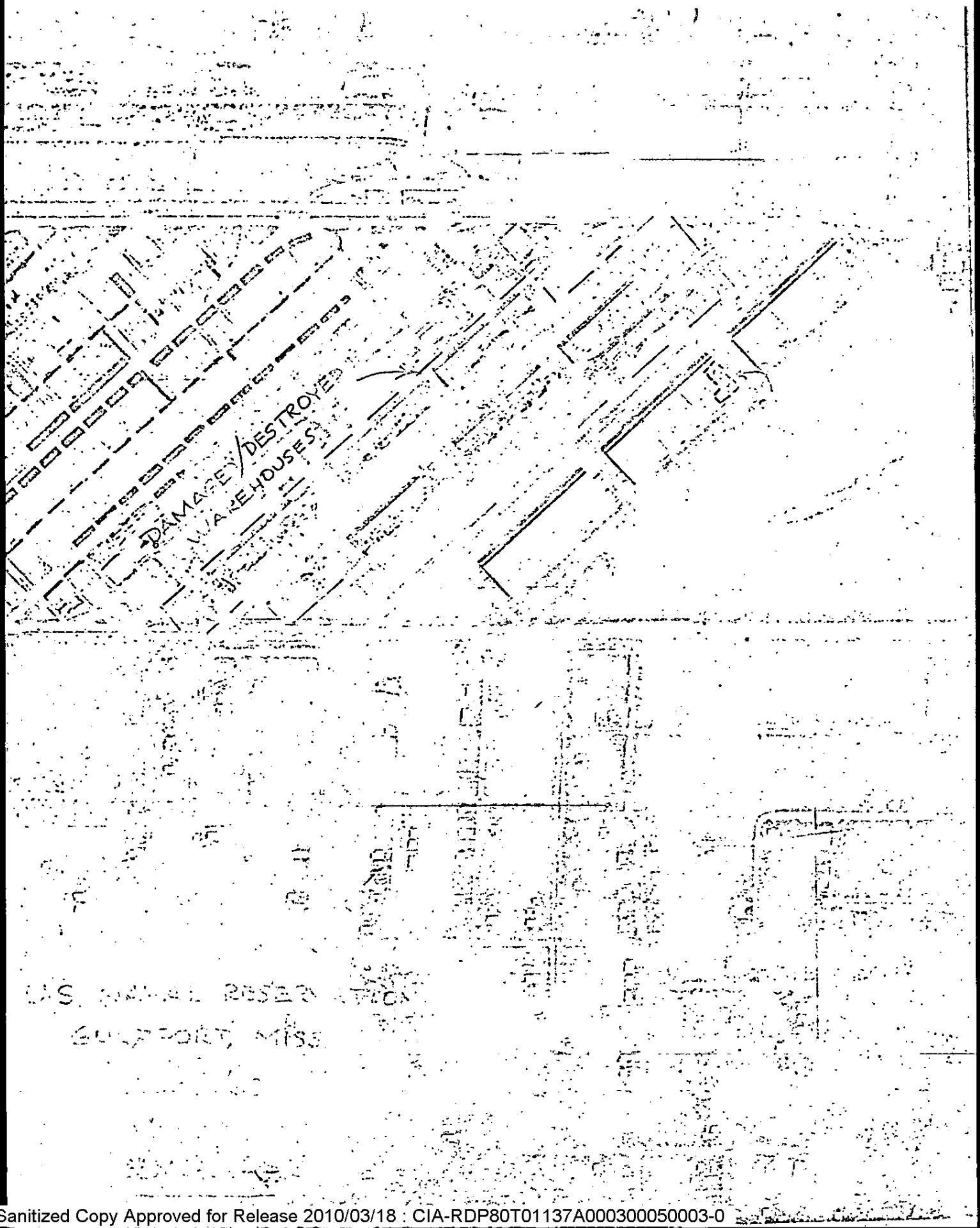

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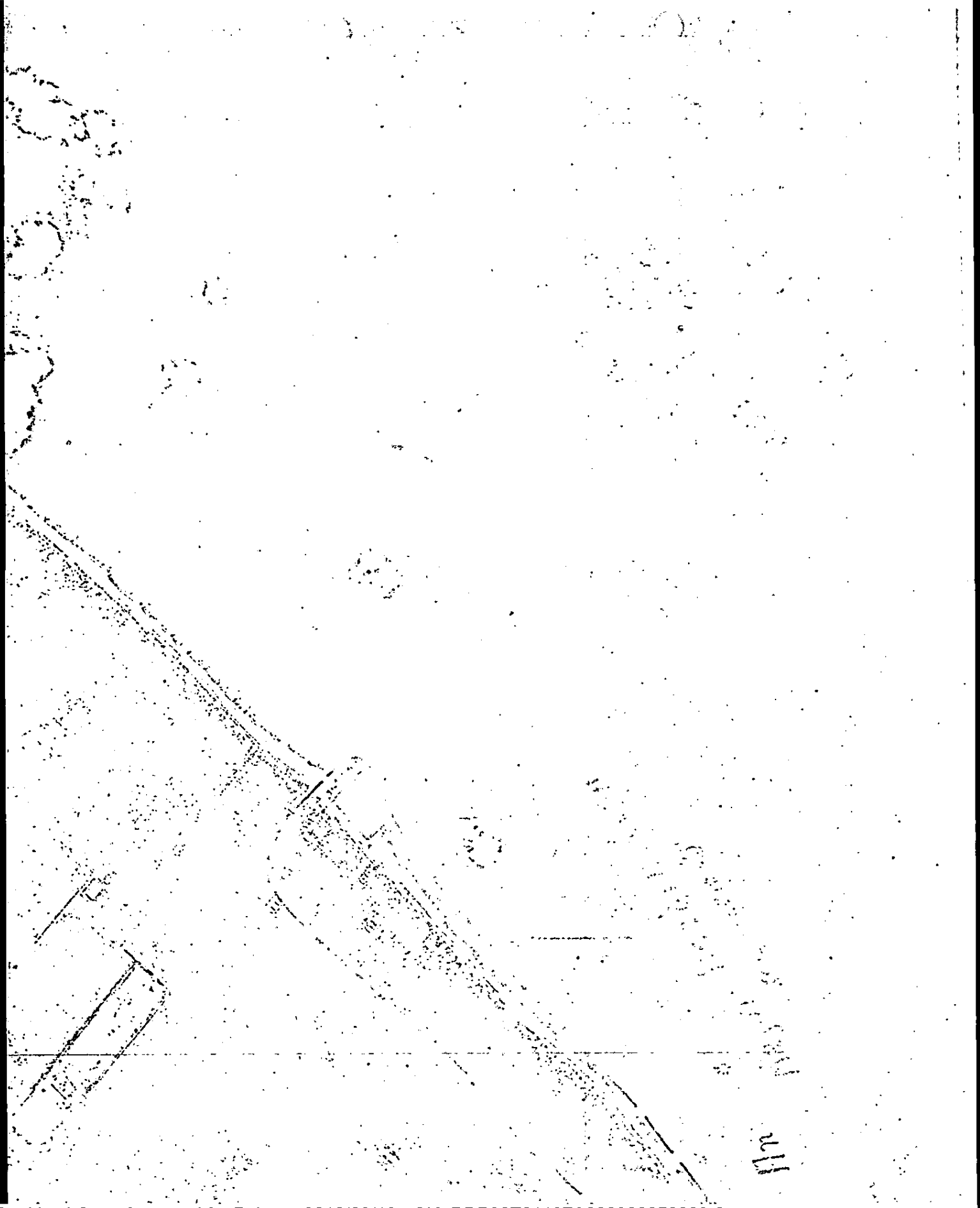

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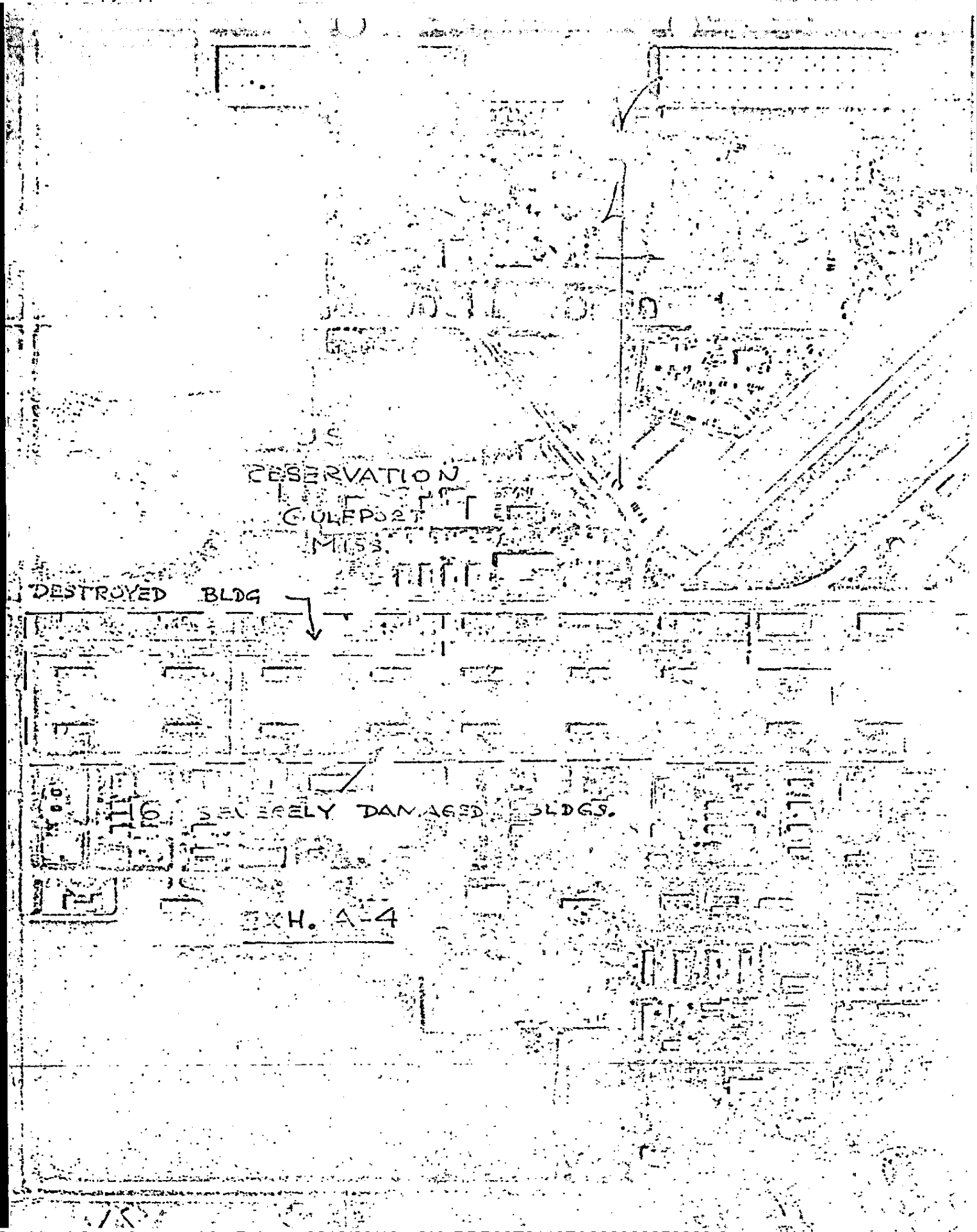

EXH. A-4

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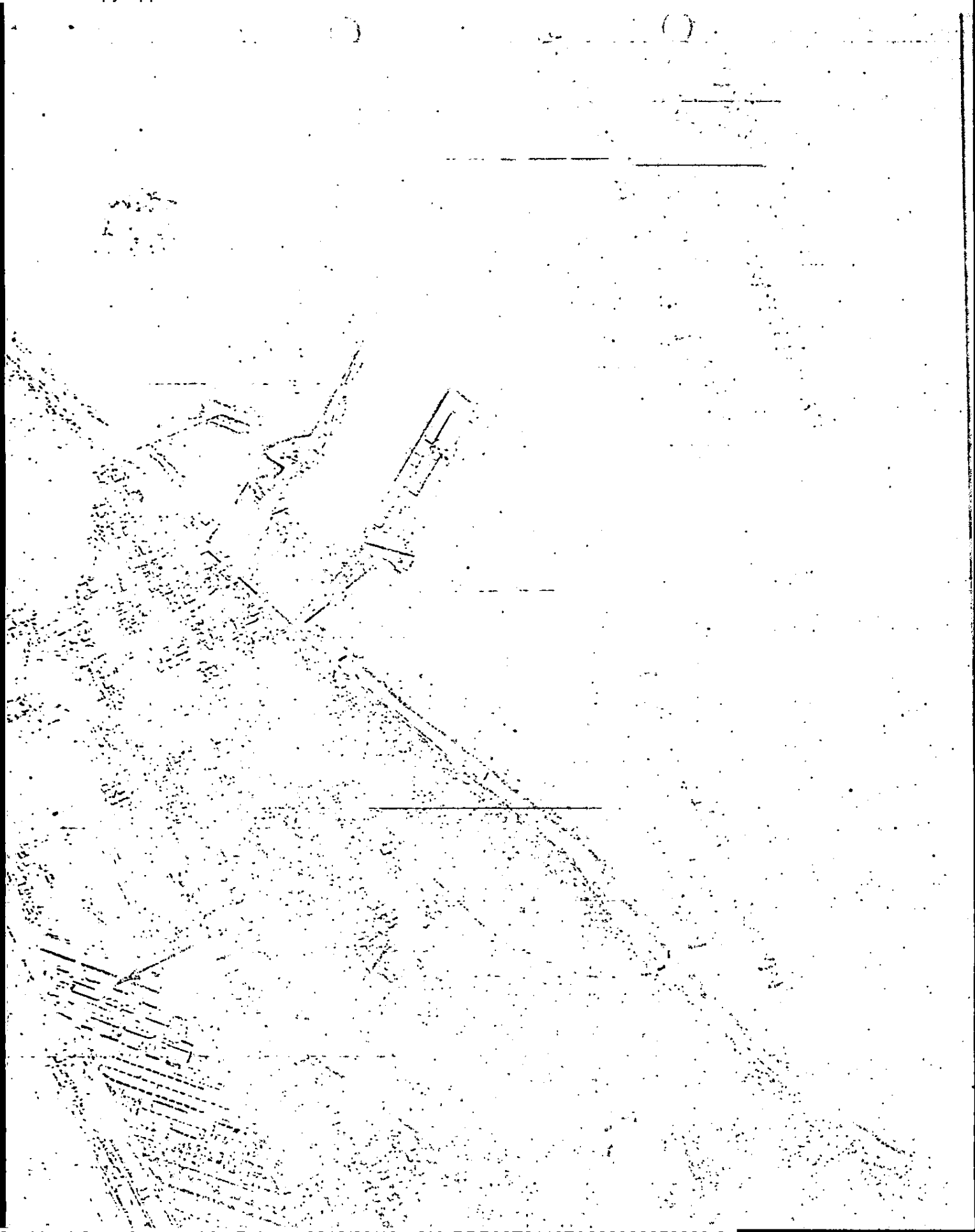

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25X1

25X1

17 December 1969

Copy 5

MEMORANDUM FOR THE RECORD

SUBJECT: ARGO Meeting, Room 208, EOB, December 9, 1969

1. The meeting opened with Dr. Guthe representing CIA in lieu of and myself were there from NPIC. A copy of the published agenda is attached. 25X1 replacement presided over his first ARGO meeting although chaired most of the meeting as was unfamiliar with pending subjects. was there in his new BOB capacity - his interest lay in the question of how to avoid duplication by the civilian agencies of efforts of the intelligence community's aero/space reconnaissance program, -- as the former proceed with their plans to use imagery and other sensor products. 25X1 25X1 25X1

2. raised the point at the beginning and end of the meeting on planning for personnel, equipment and procedures for exploiting imagery and other sensors (primarily imagery) by the civilian agencies. earlier suggestion that be considered as one possibility was brought up -- of USGS mentioned that his cleared-for-TK Reston facility had space for other agencies but was not being used by them -- we (NPIC) said we would make available our equipment catalogue in response to a point in that area. This discussion was concluded by stating (a) that (having left Agriculture and assumed NASA/user interface job in earth resources survey) would prepare some views on civilian needs for exploitation and (b) the next few meetings would be primarily concerned with this question - exploitation planning or, in words, the data reduction process. 25X1 25X1 25X1 25X1 25X1

3. One point of interest seemed to lie in a belief that automation may project far into the PI process - perhaps much further than is, in reality, possible. This may be the subject of further briefings by contractors and, on occasion, NPIC & NRO. 25X1

4. Four briefings were given as noted in the agenda:

ESSA - Snow

ESSA has experimented with resolution requirements for determining amounts of water contained in snow cover. They concluded that 56' resolution was needed above the timber line and 28' below that line. This seems to be a function of contours

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25X1

25X1

and available topographical information. The flatter lands make assessment of snow volume more difficult. NPIC had assisted in the experiment to the extent of making some contact prints through thicknesses of acetate in order to degrade the resolution to approach that point where it reflects minimum quality. will get together with of ESSA to try to improve techniques in water/snow measurements. 25X1

USGS - Alaska Pipe Line

USGS presented a survey of a line from Prudhoe Bay on the Alaskan North Slope south through Fairbanks to the south Alaskan Shore. The line was to contain information necessary to planning a pipeline to take oil from the new fields recently discovered. The briefing entailed a rather complex use of maps (old and new), some "ancient" topographical descriptions, a variety of scales, mixed imagery, etc. The study provides the base for a ground truth survey.

Engineers - Civil Works Interest

The Engineers briefer divided an Engineer interest in high altitude imagery into three categories: Dams & Reservoirs - can use 10' resolution for location and site planning for high dams but need much greater resolution for this purpose in small dam planning. One foot contour interval needed for detailed plans. Flood Zone Damage - need photo bank (data base) for selected areas susceptible to damage - need aircraft at 6-8-10,000' to take photos for sufficient resolution (unstated) to provide sufficient detail for damage assessments. Coastal Projects - wave direction and height essential to shoreline planning can use nearly any photography from air or space. Engineers would like to build a data base of imagery over 10-12 Years to aid in such shore problems as inlets shifting.

NPIC - SO-242

gave a briefing on SO-242 consisting of the EK presentation materials. He made some prints and a roll available (a small portable light table from Navy was available). There was considerable interest shown. Bob handled the "evaluation" and "value" in good order - stating that the intelligence community was currently evaluating color for its purposes and that those present were aware that their needs were different. 25X1 25X1

5. , NRO representative to ARGO, stated that NRO had set up an interagency group (would be the Naka group) to look at color 25X1

25X1

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including its value. As a result, the possibility of an ARGO briefing on the results was discussed as likely in January or February. I mentioned that it was likely each department and agency was, in addition to any interagency positions, determining the value of color to it -- this was said to dispel any feeling that in a month or two one would find a single pat answer to a multiplicity of need.

6. A final and serious "although seemingly facetious" note -- The U.S. Government (per [redacted] is contracting with the Mexican government to sense mariuana and then destroy it. The by-product might be the ability to sense opium poppies under SECRET arrangement with Turkey. 25X1

7. The next meeting ~~will be held January 28th~~, 1970 at 9:30 A.M. in Room 208 EOB. 25X1

[redacted]

Planning, Programming, & Budgeting Staff
NPIC

Attachment:
Memorandum For ARGO Committee Members
Dated - November 26, 1969
Subject - Change in ARGO Meeting Schedule
S E C R E T

Distribution:
Copy 1 - O/Dir , w/attach
2 - NPIC/TSSG [redacted] w/attach 25X1
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4 - NPIC/PPBS, w/attach
5 - NPIC/PPBS/PPD, w/attach

[redacted] 25X1

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EXECUTIVE OFFICE OF THE PRESIDENT

OFFICE OF SCIENCE AND TECHNOLOGY

WASHINGTON, D.C. 20506

ATTACHMENT TO

[redacted] 25X1

November 26, 1969

MEMORANDUM FOR ARGO COMMITTEE MEMBERS

SUBJECT: Change in ARGO Meeting Schedule

The purpose of this memorandum is to confirm December 9, 1969 as the date for the next ARGO meeting. The time and place of the meeting remain unchanged at 9:30 in Room 208, E.O.B.

The agenda for this meeting will be:

1. Discussion of items pending from October 1, 1969 ARGO meeting - OST
2. Snow Cover Presentation - ESSA
3. Porter Range, Alaska Study - USGS
4. New material - NPIC
5. Civil Works interest in Remote Sensing - OCE

[redacted] 25X1

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TSSG/RED/RSB-36/70
3 February 1970

MEMORANDUM FOR THE RECORD

SUBJECT: ARGO Meeting, 28 January 1970

1. The ARGO meeting was conducted by [redacted] of PSAC Staff since [redacted] Director of ARGO, was on a trip. 25X1 25X1

2. The primary purpose of this meeting was to allow NASA to brief on the ERTS satellite system and define the outputs from that system. They (NASA) presently plan to utilize about 35,000 sq. ft. of floor space to house the computers for this single effort.

3. The system includes a High Resolution Television System (HRTS) and a 4-channel Multispectral Scanner (MSS). Both these systems will provide digital information back to the three ground receiving stations within the continental United States. These telemetry stations are at Greenbelt, Md., Corpus Christi, Texas, and on the West Coast (I missed the name of the third station).

4. Both imaging systems will be long-life systems that will provide repeated coverage of the United States on a scheduled basis.

5. Either General Electric or TRW will be the software contractor for this system and all data will be transferred to Goddard for handling.

6. The second major item of interest was the establishment of a study group to determine a plan for national disasters. [redacted] 25X1
[redacted] of NASA was named director of the study group, and ARGO is 25X1
requesting each of the participating agencies to name committee members by 10 February 1970. The first meeting of the study group will be immediately after the members are named.

7. The study group will recommend to ARGO a plan for generation of all data necessary for national disasters. This will include (a) data acquisition such as flying photography, tasking the classified systems, integration of data into a single data base; (b) data reduction including tiger teams for interpretation; (c) analysis of the data such as mapping, detailed reporting and definition of problem areas; and (d) recommending plans for action by other government agencies as well as State and local governments. It was not clear as to whether NPIC would have a member on this study group or not.

GROUP 1
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TSSG/RED/RSB-36/70

SUBJECT: ARGO Meeting, 28 January 1970

8. The third item discussed at this meeting was conducted by [redacted] and dealt with the need of understanding of the NASA group in the amount of pre- and post-preparation that is necessary for exploitation of imagery. It was suggested that the next ARGO meeting be held in NPIC for the express purpose of giving the entire group a better idea of the amount of technology involved in the door-to-door operation of an exploitation system. It was pointed out that the development of equipment and the R&D efforts involved as well as the time required in R&D would be of benefit to the group. 25X1

9. This next meeting is to be held at NPIC the first week of March, and should include briefings on data handling, computer interfaces, and research and development, as well as data flow and analysis generation.

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[redacted]

RSB/RED/TSSG

DISTRIBUTION:
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1 - C/PPBS/NPIC (Attn: [redacted]) 25X1
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26 February 1970

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MEMORANDUM FOR THE RECORD

SUBJECT: Steering Committee/ARGO Meeting, 28 January 1970

1. [redacted] and I attended the Steering Committee/ARGO Meeting on 28 January 1970. The meeting was held in Room 208 of the Executive Office Building. [redacted] chaired the meeting in the absence of [redacted]

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2. The first item of business was a status report on the proposed study group (presented at the October 1969 meeting) concerned with identifying the skills, personnel and equipment needed for national disaster support. It was announced that [redacted] OEP, will head the group which is in the process of being formulated. The member agencies of ARGO were asked to name, by 10 February 1970, a representative from their respective offices. This study group will investigate the possibility of using the Reston, Va., TKH facility as a home for the exploitation effort and will pass the hat among the ARGO member agencies to obtain, by donation, the required personnel committed to disaster support on a first priority basis. There stands an established means of imagery collection, but the interpretation phase of the program is lacking. Establishment of a small component of photographic interpreters, foresters, geologists, etc. prepared to act immediately as required by a disaster situation, is the goal of the study group. Such a complement will work under the auspices of an interagency agreement. It was mentioned and agreed that the type of information needed would be disaster dependent and that the analyst component will also be concerned with data collection from other than reconnaissance sources. The study group will also be concerned with the compilation of a pre-disaster data base. Primary interest of the analysis group will be the establishment of procedures to provide instant analysis of disaster conditions as an input to the decision makers so they may take immediate action in providing disaster relief. Although the agencies themselves feel they did a

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SUBJECT: Steering Committee/ARGO Meeting, 28 January 1970

good job in providing disaster situation analysis and aid following Hurricane Camille, the public is criticizing the national effort as being slow and disorganized. It is the intent of the study group to have a plan of action prepared by the time of the next ARGO meeting and to have the plan implemented before the rapidly approaching spring flood and storm season.

3. presented a report on the status of the satellite coverage of Chile. This had been requested to furnish ground water information. He reported that KH-4 coverage had been obtained but due to adverse weather conditions the amount of good coverage was limited. A memorandum outlining the results of the photographic interpretation analysis has been issued from NPIC.

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4. The ARGO was then briefed on the data handling aspect of NASA's Earth Resources Satellite Program (ERS). The payload will consist of a High Resolution Television system (HRTV), a Four Channel Multispectral Point Scanner, and a ground station data monitoring system. The HRTV will provide continuous coverage of the United States in 100 mile (ground distance) formats at ground resolutions of 300 to 400 feet. Approximately 400 frames will be received in an 18 day period. The data processing equipment, however, must be capable of handling three HRTV images every 25 seconds when the satellite is on acquisition station over the United States. The Multispectral Scanner will provide imagery collected at the prescribed bandwidth, however, the resolution will not be as good as that obtained by the HRTV. Ground stations located throughout the US will sense such information as temperature, humidity, water level, etc. and transmit this data to the satellite which in turn will retransmit the information to the tracking station along with the video/scanner data. The satellite is capable of servicing as many as 1000 ground stations. Interrogation/control of the satellite will be accomplished by tracking stations at Greenbelt, Maryland, Fairbanks, Alaska, and Corpus Christi, Texas. The information will then be transmitted to NASA's Goddard Space Center (Greenbelt, Md.) for data processing. NASA has allocated 35,600-square-feet of floor space to house the ERS data processing and operations control center.

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SUBJECT: Steering Committee/ARGO Meeting, 28 January 1970

Two methods will be employed to process the imagery. The entire take of both video sensors will be bulk processed with about ten percent of the total coverage being precision processed to accommodate specific user requirements. The two methods differ in that the precision processed material will be rectified, of possibly better resolution and, in the case of the multispectral scanner, registered. The final output generated from the video sensor data will be a film print. NASA will record and store the video and multispectral point scanner image information on tape for about two years. The film (hard copy) print will be indexed and retained by NASA indefinitely. It appears now that the film print will receive the primary usage, however, participants may also request a data tape record of the coverage. Psuedo-real-time use of the video sensors will be possible but the resolution and orbital information may not be as good as available a short time later.

The ERS Program is extraordinary in that the output will be available to government as well as private and commercial users. Investigative proposals may come from almost anywhere, individual scientists, institutions, research foundations, industry, etc. The acceptance of proposals will be made by 15 April 1971. NASA has divided the users into two categories. Prime users, who will receive their film copy about 18 days after acquisition, will be government agencies. Private and commercial investigators are considered secondary users and will receive their film copy at a later date, about 30 days after acquisition. Domestic satellite video coverage will thus be available to almost any person or group on a secondary basis. In order to properly process the data, good orbital information is required and is expected to be available from the spacecraft by means of a narrow band channel. Some thought is being given to incorporate weather information with sensor programming to provide better utilization of the acquisition capability.

Although the satellite response is primarily real-time, two onboard recorders are incorporated in the system to provide a repository for acquisition data when the tracking stations cannot contact the bird. This will be especially useful for obtaining information from oceanographic areas beyond our coastal regions. During acquisitions

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SUBJECT: Steering Committee/ARGO Meeting, 28 January 1970

over the United States, the data will be continuously monitored in order that improper commands can be rectified and parameters updated to better fit user requirements.

It was mentioned that it would be valuable if the photography obtained in the NASA underflight program (aircraft photography) could be indexed and made available for use as a data base for the ERS Program imagery. Funds, however, are not available to support this effort.

5. of USGS, who heads a group of about 30 employees at the Reston, Virginia facility, announced that they were having reasonable success in domestic mapping utilizing KH-4 coverage but have come up with numerous small holiday areas scattered throughout the United States. His crew has approximately three or four months of work left before they run out of TK coverage and he questioned about the availability of domestic U-2 coverage of the holiday areas. would like vertical coverage taken with a framing camera employing a six-inch lens at U-2 operational altitudes. had been advised of this pending inquiry and at his request I had looked into the problem. I informed that since most of the U-2 domestic flights are for test purposes only, the DPs (if any) and the ONs are not permanently retained. The test footage still in existence is difficult to locate because individuals concerned with a particular test effort usually keep the material for their own purposes. I pointed out, however, that since U-2 test flights are made periodically, it may be possible to obtain the needed coverage upon his request through the proper channels. The SR-71 also conducts test flights which might be scheduled to obtain the coverage, however, the SR-71 is restricted in its flight path and may not be capable of employment for this effort. request for support was channelled to of the MC&G working group as he is in the best position to check into possible utilization of the SR-71. Should not be able to aid we volunteered to arrange a briefing for on the different camera systems utilized in the U-2 aircraft and to work with him in order that he might obtain, if possible, the needed

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SUBJECT: Steering Committee/ARGO Meeting, 28 January 1970

coverage. We will now wait and see what can do before we take any action. 25X1

6. In keeping with present ARGO emphasis on data processing, suggested that the next ARGO meeting be held at NPIC where a briefing be given to introduce the members to the Center's mission support data flow. He will, through request a briefing on the Center's data handling methodology so that the ARGO might become cognizant of the data collection/processing and interpretation interface. Since most of the ARGO members are familiar with our organizational structure, the aim of the briefing is to show working level data flow and processing pertinent to the analysis of mission imagery. This encompasses the type and quantity of pre-recovery information employed for preliminary plotting, mission orbital characteristics, data required for breakdown of the original negative, confirmation of the telemetry data from the imagery, description of quantity and type of information required to be on line for the accomplishment of accurate mensuration and the post recovery data analysis/reduction required to update preliminary information and increase overall accuracies. The briefing should also tell when and how the data is obtained, processed and fits into the overall mission analysis. The meeting is tentatively planned for late February or early March. has informed me that the meeting will be at NPIC on 9 March 1970). 25X1 25X1 25X1

7. A few days following the last ARGO meeting, from the Department of Agriculture called to compliment us on the quality of the briefings he has received at NPIC. He was especially impressed by the quality of our viewgraphs and querried me concerning the method by which they are produced. His interest was to learn our "secrets" so he might improve the quality of his briefing materials. Since classification concerning our "secrets" in this area was no barrier, I was happy to pass them on. I informed him that the high quality of our briefing materials, including viewgraphs is the result of a competent, professional art department and an equally competent photographic laboratory. stated that he had a feeling this was our "secret" but was hoping to learn a short cut method by which we achieve our high quality. I expressed the Center's regret that we don't have such a short cut but asked that should he find one would 25X1 25X1

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SUBJECT: Steering Committee/ARGO Meeting, 28 January 1970

he please let us know. He agreed and thanked us for the information.

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NPIC/TSSG/APSD/IEB/Section I

Distribution:
Cy 1 - NPIC/TSSG/APSD,
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17 March 1970

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MEMORANDUM FOR THE RECORD

SUBJECT: Meeting of the National Disaster Support Task Group

1. The initial meeting of the National Disaster Support Task Group was convened at 1400 hours on 17 February 1970 at the USGS facility in Reston, Virginia. Mr. Otto Guthe was present for CIA and I was present for NPIC. Other attendees were:

25X1

2. After welcomed the group to the Reston USGS Facility, Committee Chairman, began the meeting by reading the letter written to the members of the National Disaster Support Task Group by A copy of that letter is attached. As stated, the aim of the Task Group is to establish an altering system in order to prepare for disaster coverage acquisition, locate sources for obtaining the needed coverage, formulate an interpretation component and institute a dissemination procedure for both raw and analyzed data. mentioned that an internal OEP group would be conducting a parallel effort, the significance of which was not mentioned. It is intended that our Task Group will have a plan of disaster support implemented

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SUBJECT: Maating of the National Disaster Support Task Group

by the spring flood season. This means we must be ready in six to eight weeks.

3. An informal briefing pertaining to 'Command Control Centers' was presented by [redacted] 25X1
[redacted] of the Institute of Defense Analysis (IDA). This 25X1
is the group that established, for Mayor Washington, the command center during the April riots in the District of Columbia. It was their contention that within the Civil Defense network are established command posts which could serve in a similar capacity during civil emergencies. It is a waste to have these emergency posts standing by waiting for a war situation and not make use of them for non-military emergencies. The point was made that such utilization would better prepare the command post personnel for a military activity since such civil situations would present a real-life exercise.

Regarding the establishment of a national disaster support program, it was IDA's opinion that a small nucleus of interested persons was needed to start the ball rolling. It was pointed out that they were addressing such a nucleus. With this in mind, the first problem is to determine whom the disaster support system is to be tailored to. It appears that this is [redacted] 25X1
Director of the Office of Emergency Preparedness, who receives his reponsibility from the President.

The next step is to survey our own group to determine which present resources might fit into the program. Procedures of action should be established and funding provided by a charter. The IDA briefers suggested that positive procedures of action, a communications network, delegation of responsibility, and an authoritative command chain be formulated.

4. [redacted] announced that since the advent of 25X1
satellite photographic reconnaissance, a total of 40 to 45% of the US has been imaged on 95% cloud free photography. It is his aim to complete the coverage profile and accomplish an update so that the oldest coverage would be no older than five years. This goal is admirable, but not very practical until future satellite systems come into their own. This coverage is to serve as a data base for the analysis of disaster situations.

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SUBJECT: Meeting of the National Disaster Support Task Group

5. [redacted] requested that the Support Task Group members consider, prior to the next meeting, the availability of the following resources within their own agencies. 25X1

a. What is available in present command and control nets?

b. What procedures are necessary to activate these nets? If special action is required, what is the cost?

c. What authority is required for network activation?

d. Once an emergency situation is declared, what latitude of agency action will be permitted?

e. Since different disaster situations require different methods of analysis and action, it must be determined to what degree each agency will participate per specific type of emergency. This tasks each member with determining what types of disasters his agency has interest in and will actively support. This is directly related to agency functions and responsibilities.

The next step is to classify disasters as to type, marry this with agency interest/responsibility and determine the required action. This done, a plan of attack and mutual support will have been established.

6. [redacted] spoke on a retrospective look at the Federal action taken to combat the devistation of Hurricane Camille. In order to ascertain the extent of damage, the USAF flew a reconnaissance mission to acquire the imagery, interpreters at Reston, Va. accomplished the readout and the information was forwarded to the President. On the surface, this appears to be a simple, 25X1

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SUBJECT: Meeting of the National Disaster Support Task Group

straightforward, efficient approach. However, when one looks into the subsurface details, he forms a different opinion. In the total Federal Camille disaster assistance effort, numerous agencies such as Dept. of Agriculture, NASA, and Corps. of Engineers, each had coverage flown resulting in a duplication of effort. 25X1 mentioned that in providing the Office of Emergency Preparedness with the requested coverage, the USAF employed a panoramic camera system while metric quality photography was the actual need. 25X1 countered with the statement that system type had not been specified and the Air Force had used the closest available reconnaissance aircraft. It was also stated that processing and printing of the material had not been accomplished in a timely manner and the information distribution to the White House was not handled in an expedient fashion. It is the aim of our Task Group to correct these problems. The question we must address is - Who is going to get what to whom when.

7. Concerning the role of CIA and NPIC in supporting the National Disaster Effort, I spoke with Dr. Otto Guthe following the meeting and he indicated that we wait and learn what the directly concerned agencies have available as a course of action prior to any commitment of CIA/NPIC resources. The next meeting is scheduled at 1300 hours at Reston, Va. on 9 March 1970.

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Section I
Image Evaluation Branch
APSD/TSSG/NPIC

Attachment: a/s

Distribution:
Cy 1 - NPIC/TSSG/APSD, w/a
2 - NPIC/TSSG/APSD, w/a
3 - NPIC/PPBS. Attn: 25X1

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Attachment to [redacted] 25X1

February 9, 1970

TO: Members

SUBJECT: National Disaster Support Task Group

The attempt to support Hurricane Camille damage assessment by use of aerial photography demonstrated pointedly the need for a coordinated interagency plan for the efficient collection and dissemination of imagery and information to support national disaster applications. During the Camille disaster overlapping photography was collected without coordination by the Corps of Engineers, U. S. Air Force, ESSA, NASA and others. In addition to the redundant effort in collection neither the photography nor derived information could be made available to national planners nor local officials, both Federal and State, in a sufficiently time-urgent manner.

As a result of this experience I am recommending that a task group be formed to achieve implementation of a coordinated interagency plan for the collection and dissemination of photography and related information in support of national disasters; I believe that such a plan should be drawn up and tested as soon as possible. The spring flood season might furnish a suitable opportunity for the testing of this plan.

In an effort to meet this goal of a coordinated plan by Spring 1970, [redacted] Director of the Office of Emergency Preparedness, at my request, has nominated [redacted] as the Chairman of the Task Group. In order to commence this study as soon as possible I would appreciate designation of your representatives to this panel by February 10, 1970, so that we may soon after define the scope and duration of this important matter. It is anticipated the panel's first meeting will be February 16, 1970. 25X1 25X1

While the need for a coordinated plan for national disaster is urgently required now, the benefits of such a mechanism of coordinated agency planning are also applicable in a routine way in the broader earth resources program. I would expect that the procedure worked out to use efficiently the imagery acquired through current channels would be considered as

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a model of the data reduction concept for the earth resources program. Later, I believe we will wish to consider as appropriate such matters as the joint agency staffing of a task group facility locally and nationally as required; automated data processing systems; large volume data storage, retrieval and dissemination system; and others.

I welcome your advice and cooperation in this matter.

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APSD/IEB-046/70
19 March 1970

MEMORANDUM FOR THE RECORD

SUBJECT: Steering Committee/ARGO Meeting, 9 March 1970

1. The NPIC hosted the 9 March 1970 meeting of the Steering Committee/ARGO. Those in attendance were:

25X1

[redacted]

2. [redacted] welcomed the group to NPIC. A briefing on the Center's data handling methodology was presented by Messrs. [redacted] Following the formal briefing the group was taken on a tour of the Photogrammetry Division, the Computer Area and the Photographic Laboratory.

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3. Because of the National Disaster Support Task Group meeting scheduled for 1330 hours the group was rushed and the NPIC briefing terminated at 1200 hours. Subsequent comments have indicated that the ARGO members are appreciative of our presentation and a re-run is scheduled to be given on 27 March 1970 for Assistant Secretary/Commerce, [redacted]

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APSD/IEB-046/70

SUBJECT: Steering Committee/ARGO Meeting, 9 March 1970

4. The date, time and place of the next meeting have not yet been announced.

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NPIC/TSSG/APSD/IEB/Section I

Distribution:
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[redacted] 25X1

[redacted] 25X1

20 March 1970

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MEMORANDUM FOR: Chief, APSD/TSSG/NPIC

SUBJECT : Assistance of [redacted] 25X1

1. The purpose of this memo is two-fold. First, to express appreciation for the efficient technical support provided by [redacted] on ARGO matters and second, to call to your attention the present assistance [redacted] is giving a special ad hoc ARGO task force on natural diasters. 25X1 25X1

2. [redacted] has provided technical assistance on ARGO matters in several ways -- degrading film, briefing on color film and general technical functions related to handling a mission, answering many technical questions are included. He has performed most effectively. 25X1

3. At present ARGO is considering, via a task force method, the use of imagery in support of coordinated governmental action in meeting natural disasters. As of this date, it is estimated that there will be about four more meetings of this task force. [redacted] assistance to this task force is in the context of technical support under guidance of Dr. Otto Guthe who represents [redacted] the DCI's advisor to ARGO. 25X1 25X1

4. Your cooperation in this arrangement is very much appreciated.

[redacted] 25X1

NPIC ARGO Consultant

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EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY
WASHINGTON, D.C. 20506

File
Argo

March 20, 1970

Dear Art:

I wish to express to you and your staff my appreciation for the excellent briefings and tour provided the ARGO Steering Committee on March 9, 1970.

I feel that the presentations were very informative and provided the members of the Steering Committee an understanding of the size and complexity of the problems associated with data management prior to, during, and after an operation in order to transform information into solved problems.

Sincerely,

[redacted]

25X1

Mr. Arthur Lundahl
Director, NPIC
Headquarters CIA
Langley, Virginia

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[redacted]

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20 March 1970

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MEMORANDUM FOR THE RECORD

SUBJECT: Meeting of the National Disaster Support Task Group

1. The second meeting of the National Disaster Support Task Group was convened at 1330 hours on 9 March 1970 at the USGS - TK Facility, Reston, Virginia. The agenda of the meeting follows:

A. Discussion by each member of:

(1) Pertinent available resources

(2) Current emergency reporting procedures

(3) Activation mechanisms

(4) Command nets

B. National Disaster Support System - Preliminary Draft

C. Next meeting

2. The each member discussion was accomplished in a verbal 'round robin' fashion which revealed few noteworthy points. It would have been much more worth-while had this exercise been accomplished on paper so that someone could have interrelated the various agency inputs. Such things as the USDA telephone contacts with their field representatives throughout the U.S., their teletype link with most state capitols, ESSA's 33,000 civilian and military meterological observers and their teletype communication to all weather stations were mentioned. [redacted] mentioned that it takes ESSA up to two hours following the occurrence of an earthquake to determine its magnitude and epicenter location. The same time frame applies to tsunamis.

25X1

Dr. O. Guthe asked the Task Group if it would be possible to anticipate disaster situations and specific areas where satellite coverage will be most likely needed to serve as a data base. A request for this coverage should then be made through channels and the intelligence demands would govern the propriety of its fulfillment.

[redacted]

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SUBJECT: Meeting of the National Disaster Support Task Group

He also said that we could possibly provide coverage on a 'target of opportunity' basis. The committee felt this approach was feasible and should be implemented.

25X1 expressed concern with where aircraft disaster photography might be processed and printed. The USAF operates under the idea that their obligation for providing reconnaissance photography terminates with the processing and single printing of the negative. A processing site(s) must be determined so that additional printing requirements will be handled in an expedient manner. Possible sites include TOPOCOM, Westover, and NRTSC. The NPIC was mentioned but dropped as a possibility.

3. 25X1 presented, for criticism, a flow chart of his idea for a disaster support system. He described his proposal but time limitations and the system complexity necessitated that comments be deferred until the next meeting. In conjunction, however, it was suggested that since different disasters require different action with different agencies involved, a matrix presenting Disaster Type vs. Action Required be drafted. A second matrix would display Disaster Type vs. Agency Involvement/Concern. The matrix idea appears to be the most sound approach yet presented. It is to be continued at the next meeting.

4. A good deal of rather warm discussion concerning the date of the next Task Group meeting arose. The meeting proposed for 17 March is to be concerned with how any disaster situations, due to spring flooding, can best be handled. Neither representative from the Office of the Corps. of Engineers will be able to attend this meeting and since the OCE has a prime involvement in flood activity, they requested that the meeting be postponed until the following week. 25X1 felt that more could be accomplished by adherence to a schedule of weekly meetings with the understanding that all members might not be present at all sessions. He requested that the OCE representatives prepare a paper containing their ideas for presentation in their absence. This seemed to be a satisfactory solution.

Continuing to meet at Reston was brought up by 25X1 who suggested we find a place in town closer to everyone's offices.

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SUBJECT: Meeting of the National Disaster Support Task Group

The Washington parking problem and availability of a suitable location such as the EOB was mentioned and a relocation vote taken. An almost unanimous preference was in favor of continuing to meet at Reston. It was suggested however, that as an aid to USGS security personnel, we begin our sessions at 1300 hours so that we might adjourn by 1630 hours rather than at 1700 hours as had been the practice for this and the previous meeting. This was agreed to and the meeting was adjourned.

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Section I
Image Evaluation Branch
APSD/TSSG/NPIC

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23 March 1970

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MEMORANDUM FOR THE RECORD

SUBJECT: Meeting of the National Disaster Support Task Group

1. The third meeting of National Disaster Support Task Group was convened at 1330 hours on 17 March 1970 at the USGS facility in Reston, Virginia.

2. A slight mix-up concerning meeting time was encountered since the time decided upon at the previous meeting had been 1300 hours while the minutes of the meeting had stated 1330 hours. Henceforth, all meetings will begin at 1300 hours. Changing to an in-town location was again mentioned but defeated by a member vote. We will continue to meet at Reston.

3. USGS, presented a briefing on the domestic KH-4A coverage which Reston currently holds and which will be employed as a data base for disaster analysis. Conspicuously missing was coverage of the state of Florida. Holiday areas also exist for about one-third of the Gulf Coast shoreline. Because this is a prime hurricane area, suggested that the Support Task Group direct, through ARGO, a request to COMIREX for obtaining this coverage prior to the August 1970 storm season. It is hoped that since the request for the KH-4 coverage would thereby be directed to a specific disaster condition in a set time frame, it will be more favorably considered than the presently standing general request for holiday coverage. KH-4 acquisition of those areas would also serve to fill requests by ESSA, TOPOCOM, Interior Dept. and USGS. An illustration of how the A-2 camera system (24" focal length framing camera with a 9" X 18" format) flown in a U-2 aircraft might have been employed to provide coverage of the James River, Virginia, flood situation following Hurricane Camille was presented. was requested to investigate the possibility of utilizing the U-2s based at Tuscon, Arizona; Edwards AFB, California; and McCoy AFB, Florida, for obtaining disaster photographic coverage.

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4. In order to more effectively accomplish our goal, had prepared a plan for establishment of five committees within the Disaster Support Task Group. This approach was presented and approved

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SUBJECT: Meeting of the National Disaster Support Task Group

by all members present. Each committee is to investigate a specific area of responsibility as follows:

Committee No. 1 - Identify platform resources (ie. ascertain what aircraft, camera systems, and/or sensor systems are available for disaster use.)

Committee No. 2 - Identify the tasking channels between civilian and DOD commands and also between civilian agencies. These channels are necessary for requesting disaster coverage.

Committee No. 3 - Identify sources of photographic interpreters which could be tasked with disaster situation analysis.

Committee No. 4 - Identify the communications network for passing information to the President and/or other interested parties.

Committee No. 5 - Classify all disasters and identify the type of coverage needed.

Resources necessary for the achievement of our goals are available, what is needed now, is coordination. Once our Support Task Group has established a working procedure, a small secretariat comprised of Task Group members will be maintained to administrate the procedure. Remaining Task Group members will be available on call for additional support. The question was raised concerning the use of commercial aerial photographic companies in obtaining disaster coverage. Since, however, our prime need, in a reconnaissance supplier, is a quick response time (occasionally within hours of the disaster) the DOD units are better organized and equipped to satisfy our requirements.

5. Snow conditions in the New England area are being monitored by ESSA since the present snow pack is a potential source of heavy spring flooding. The recent snow storm which deposited from 15 to 30 inches of wet snow in the North Dakota - Minnesota region is also of great concern to ESSA as a rapid spring warming could produce

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SUBJECT: Meeting of the National Disaster Support Task Group

severe flooding. [redacted] was asked if photographic coverage of these areas would be of value in assessing the snow condition. He stated that snow depth and water content were the main questions and that photography, even infrared sensors could not presently provide such answers. He said he would delve further into the problem to determine if photographic coverage could be helpful. Dr. Otto Guthe mentioned that recently recovered 1109-1 mission material might have acquired these areas and 1109-2 still may. I said that I would check the coverage and advise [redacted] concerning these areas. (This was accomplished the following day -[RSB]).

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6. [redacted] questioned me concerning the proper command channels by which he could place a requirement with NPIC. (The following day I conferred with [redacted] on this point and notified [redacted] of the appropriate channels.)

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7. The next Disaster Support Task Group meeting is scheduled for 24 March 1970.

[redacted]

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Section I
Image Evaluation Branch
APSD/TSSG/NPIC

Distribution:
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2 - NPIC/TSSG/APSD
3 - NPIC/PPBS, Attn: [redacted]

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pumping req. 2 day est. --- OK

EXECUTIVE OFFICE OF THE PRESIDENT

OFFICE OF EMERGENCY PREPAREDNESS

WASHINGTON, D.C. 20504

Date: March 30, 1970

Subject:

To: [redacted] 25X1
NPIC
Central Intelligence Agency
Washington, D. C.

Under separate cover three rolls of multispectral imagery of several U. S. locations were forwarded to your Center. Mr. [redacted] has this material in his custody. The locations are Baton Rouge, La., Point Comfort, Tex., and Mechanicsburg, Pa. The material includes rolls of positive transparencies of aerial Ektachrome, [redacted] and 4- Hasellblad multispectral photography. The multispectral data is of particular interest in that it would be very helpful to us in furthering our investigation of spectral signatures of certain images contained therein. Work so undertaken is in cooperation with the NASA Earth Resources Aircraft Program from which source these data come. 25X1 25X1

Specifically, it would be very much appreciated if microdensitometer traces and readings could be made on the specific areas delineated to [redacted] and the tracings with density values forwarded to me. Additional suggestions for improving the analysis would also be very helpful. 25X1

This imagery, as well as the color and thermal data, contain, I believe, other information of some interest to your organization and, for that reason, I am most happy to make it available for your internal use as you may see fit. Since an investigation report for NASA is required in the near future, would two or three weeks over your way be adequate for your use?

[redacted] 25X1

Resource Evaluation Division
National Resource Analysis Center

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1 April 1970

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MEMORANDUM FOR THE RECORD

SUBJECT: Meeting of the National Disaster Support Task Group

1. The fourth meeting of the National Disaster Support Task Group began at 1300 hours on 24 March 1970 at the USGS TK Facility, Reston, Virginia.

2. [redacted] USGS, mentioned that USGS had received no KH-4 domestic coverage north of 43 degrees north latitude. He questioned [redacted] and Dr. O. Guthe about the reason for this coverage being withheld. No explanation could be given; however, [redacted] said he would look into the matter.

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3. [redacted] asked if any attempt was to be made to acquire a copy of all existing domestic aerial photographic coverage for disaster data base purposes. This would be a mammoth undertaking requiring a vast indexing/storage/retrieval capability equipped to handle various film and format types/sizes. Such an undertaking would probably necessitate the establishment of a new government agency with this task as its prime function. Presently the Federal Interior Department maintains domestic coverage records of both government and commercial aerial photography. The actual imagery, however, is not received. The USGS, rather, is attempting to obtain KH-4 coverage of the entire US and maintain an indexed file of the imagery. The scale and format size of the KH-4 material lends itself to an ideal storage maintenance situation.

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4. At the suggestion of [redacted] we separated into two working groups. One group concerned itself with identification of disaster types and the other in which I participated, with identification of the tasking channels between the civilian agencies and DOD commands. The outcome of a lengthy and serious group discussion was the suggestion that a disaster task group secretariat working

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SUBJECT: Meeting of the National Disaster Support Task Group

under OEP management and an interagency agreement be responsible for the civilian agency/DOD coordination. This secretariat would work closely with OEP field representatives and be aware of all reconnaissance requests and initiated/pending action. 25X1

worked on preparation of a statement of action 25X1
necessary for the establishment of authority for the proposed secretariat. It was considered necessary that such a statement be approved by the Director of OEP and the Secretaries of the Air Force, Navy, Army and DIA.

5. At the next meeting scheduled for 31 March 1970, work is to continue along these same avenues.

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Section I
Image Evaluation Branch
APSD/TSSG/NPIC

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2 April 1970

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MEMORANDUM FOR: Chief, Planning, Programming & Budgeting Staff, NPIC

ATTENTION: [redacted] 25X1

THROUGH: Chief, Applied Photo Science Division, TSSG/NPIC
Chief, Image Evaluation Branch, APSD/TSSG/NPIC

SUBJECT: National Disaster Support Task Group

1. The fifth meeting of the National Disaster Support Task Group took place on 31 March 1970 at Reston, Virginia.

2. The Task Group is presently at the point of requesting photographic interpretation support via an interagency agreement. It is necessary that the interpreters designated to this effort be available on a seven day per week basis, as required. Time expended would range from one day to two weeks depending upon the particular disaster situation. The interpretation task will be accomplished at the USGS, TK Facility, at Reston, Virginia. Since the data base material is KH-4 photography, cleared personnel are required for this effort.

3. I was asked how many PIs NPIC could commit to support this effort. Some number between one and six was suggested by the Support Task Group.

4. The official request for NPIC support will be placed through either the Steering Committee, ARGO or through the Director of OEP. The above mentioned query is intended as an aid for the placement of a realistic request.

5. Your guidance in this matter is needed since the answer is a Center management decision.

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[redacted]

Section 1
Image Evaluation Branch
APSD/TSSG/NPIC

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SUBJECT: National Disaster Support Task Group

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14 April 1970

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MEMORANDUM FOR THE RECORD

SUBJECT: Meeting of the National Disaster Support Task Group

1. The fifth meeting of the National Disaster Support Task Group was convened at 1300 hours on 31 March 1970 at the US Geological Survey Facility, Reston, Virginia.

2. Following a review of the 24 March meeting minutes, USGS, presented a short briefing on 25X1
the advantages of employing a framing camera, namely the A-2 system, for obtaining disaster coverage. This system flown at 70,000 feet provides a per frame ground coverage of a five by ten mile area at a scale of 1:35,000. The USGS is opposed to flying panoramic cameras in lieu of metric systems since panoramic frames are more difficult to mosaic. This difficulty is compounded because, in general, it requires more panoramic frames to cover the same flight line. George mentioned that when OEP places a request for disaster coverage, items such as camera system, flight path, filter and film type should be specified. This seems like a sound idea until one considers such problems as system availability, flight path requirements of the aircraft, film type on hand, etc. The better solution would be to indicate area of needed coverage and let the Air Force do the rest. George suggested that we specify such film types as Kodak Plus-X Aerographic or Tri-X Aerographic exposed using a Wratten 12 (medium yellow) filter in order to get high quality results. This comment enforces the approach that we should indicate areas and let the Air Force do the rest since they normally stock film types 3400, 3401 or 3404 for their reconnaissance needs and the requesting of coverage on a "commercial" type film may cause some confusion. The use of operational film types will also provide higher quality imagery than the commercial films. The need for metric photography for disaster analysis is unclear to me since I feel that an interpreter would prefer to work from larger scale (panoramic) imagery. will look into the aircraft/system availability 25X1
and location.

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SUBJECT: Meeting of the National Disaster Support Task Group

3. [redacted] investigated the complaint that USGS had not received KH-4 domestic coverage north of 43 degrees north latitude. Some old coverage of this area was located and forwarded to Reston; however, there has been no recent coverage of this region and, thus, USGS has not received any. Reston was reassured that they will receive all domestic KH-4 coverage, with the exception of special classification edited areas. 25X1

4. [redacted] USGS, read a portion of a Senate bill concerning National Disaster Support/Relief introduced by Sen. Birch Bayh [redacted] stated that this bill was introduced in order to pre-empt an Administration bill which will soon be presented. It is expected that this bill will provide for action prior to national disaster declaration and would, thus, directly benefit the proposal of our Task Group. 25X1 25X1

5. Since the data base (KH-4 domestic coverage), a TK working area and lab facilities are available at USGS, Reston, it has been decided that the disaster photographic interpretation task will be accomplished there. Should interpretation needs require the employment of specialized equipment not available at Reston, other facilities will be tapped for support. The NPIC may be asked to contribute support in the mensuration and reproduction areas when such support is needed to answer special requirements. It is expected that such requests will constitute only a minor effort.

6. The remainder of the meeting was spent in committee action. I worked with Dr. Otto Guthe and [redacted] on the Tasking Channel Committee. Following subsequent consultation with [redacted], PPBS/NPIC, it was recommended to the committee that the appropriate tasking channel for the NPIC was through the Steering Committee/ARGO to the DCI. 25X1 25X1

7. The next Task Group Meeting will be an all day session beginning at 0800 hours on 7 April 1970.

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Section I
Image Evaluation Branch
APSD/TSSG/NPIC

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SUBJECT: Meeting of the National Disaster Support Task Group

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21 April 1970

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MEMORANDUM FOR THE RECORD

SUBJECT: Meeting of the National Disaster Support Task Group

1. The sixth meeting of the National Disaster Support Task Group began at 0930 hours on 7 April 1970 at the USGS TK Facility, Reston, Virginia.

2. The minutes of the previous meeting were reviewed and approved. It was agreed that the interagency agreement for disaster support should be presented to the agencies through ARGO channels and sign-off achieved via the same route.

3. We next divided into our respective groups for committee action. I worked with [redacted] 25X1
USA TOPOCOM on the PI Resources Committee. Our concern is with the interpretation phase of the support group and interrelates with all of the other committees. Post disaster coverage will be acquired through the use of the U-2/U-2R reconnaissance platform utilizing either the A-2, B, IRIS II or 112-B camera system. The A-2 units are presently in moth balls and although the B camera systems are being maintained in a "flight ready" condition, their employment would result in some delay. Thus, for immediate response, either the IRIS II or the 112-B system would be utilized. Both are panoramic systems and therefore met with some disfavor from USGS and TOPOCOM because of the mosaicing problem. It was pointed out at a subsequent discussion that the interpretation of the disaster situation was of prime concern and that metric quality and ease of mosaic production was not extremely vital. The problem was really to convince old line mappers that metric fidelity is not required for interpretation and damage assessment of disaster situations. When the system choice is available, the IRIS II is preferred over the 112-B because of its larger scale and format size. Other aspects of interpretation such as EEI's, light tables/viewing equipment, number of duplicate positives required, availability of the original negative and mode of presentation to be employed for interpretation reporting were discussed.

4. Following lunch, the group reconvened and [redacted] stated 25X1
that he wished the final report of the Disaster Support Task Group be ready for presentation in about two weeks. This requires that the individual committee drafts must be ready in about a week in order that they may be composited to form the final report. It is intended that

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SUBJECT: Meeting of the National Disaster Support Task Group

the report will be presented at the next ARGO meeting scheduled for 22 April 1970.

5. It was requested that the NPIC furnish some briefing boards to be employed as representative samples of the type of illustration which the Disaster Task Group will provide for Presidential briefing purposes. This is being accomplished.

6. The next Task Group meeting will be on 21 April 1970 at the USGS, Reston, with committee meetings being scheduled on an ad hoc basis.

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Section I
Image Evaluation Branch
APSD/TSSG/NPIC

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NPIC/TSSG/APSD/IEB (21 Apr 70)

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19 June 1970

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MEMORANDUM FOR THE RECORD

SUBJECT: ARGO Meeting - Room 213 - EOB, 0930-1345, June 17, 1970

1. The meeting was chaired by [redacted] and opened promptly with the briefing by [redacted] on diffraction pattern research. The briefing was well delivered and there were several questions. Several ARGO members were obviously well-informed with the state-of-the-art involved. [redacted] asked [redacted] if it would be useful to NPIC to have a stated interest from his office in the research; [redacted] replied in the affirmative. [redacted] also requested a further briefing as the diffraction signature project advanced.

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2. The next briefing was given by [redacted] (NPIC) on the Rumanian floods. Again there was considerable discussion and our briefers performed well. I had introduced them and prefaced the briefing with remarks that while not our normal function, we recognized the importance of the interest and pleased we could cooperate. I also commented on the 1110-1 & 2 coverage of Rumania and lack of coverage of Peru.

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3. The next briefing was on the Peru earthquake coverage. This was a "mixed bag" of policy statements. While confusing, reasons did appear for the vagueness. Apparently RC-135s were available. Also apparently, no one actually requested air coverage. Behind all this, it seems that the delicate political relation to Peru of the U.S. precluded clarity in the matters of aid and photo coverage. (When doctors were offered, they were (reportedly) refused.) It boiled down to "Peru did not request air photo coverage". The Peru situation may lead to clarification of policy in future cases -- and I assume this will involve the role of the Ambassador and the Embassy section chiefs with State and other agencies. Satellite coverage, of course, is politically in a different situation and decisions can be made in Washington without, necessarily, reference to the field.

4 [redacted] Lockheed briefed on the experiment of using the U-2 to test the Return Beam Vidicon. [redacted] is under Lockheed/NASA contract in connection with ERTS satellite program. The return beam vidicon camera described in this briefing is essentially the same system as that to be used in the Earth Resources Satellite. The system employs a newly developed RCA pick-up tube which has a 5000 line scan format (a standard pick-up tube has a 525 line scan format). When flown at an altitude of 70,000 feet, as opposed to

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satellite altitudes, the system (using the eight inch lens), produced ground resolutions in the order [redacted] NASA's [redacted] seemed pleased with the performance that the system displayed.

5. [redacted] briefed on status of Gulf Coast (Texas to Florida) coverage (requested by ARGO and OEP and approved by COMIREX). CIA (in the West) and AF (in the East) are covering. Film is processed at Westover and the comment made that Westover needed the activity and experience. It is delivered to Reston. Quality has been excellent for disaster purposes (IRIS II) but not too useful for mapping at this time. However, after several conflicting statements it seemed that in 9 months a modified rectifier will be available to make the IRIS II camera film useful for mapping. KH-4 photography is still preferred due to easier handling. U-2s were used in context of training missions - no special flights.

6. The Disaster Task Force report was discussed briefly and postponed for a few days as General Lincoln had made some organizational changes in OEP - establishing an Emergency Operations Center. This will be reflected in the report. Changes in the report to reflect mainly security improvements [redacted] CIA/SEC) were made by memorandum from Guthe to [redacted] the Chairman of the Disaster Group - (I added a few similar changes by supplemental memo - Guthe to [redacted] spoke of appreciation for NPIC's help, importantly the design and production of unclassified "spectaculars" (briefing boards).

7. New Business

-- [redacted] is about half-way through a round-robin of talks with the civil agencies' sub-cabinet officers regarding ARGO matters. He hopes to review and reopen the matter of ARGO charter -- extend, modify or eliminate its activities.
-- Next ARGO Meeting in late July and then in September
-- [redacted] (CIA/SEC) had requested a new update list of TK clearances in civil agencies which are justified for ARGO
-- [redacted], USGS, reported a requirement for high altitude air coverage of the U.S. He will distribute later a justification paper.

[redacted]

Distribution:
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3 - NPIC/TSSG/APSD (Attn: [redacted]
4 - NPIC/TSSG/RES/RSB (Att

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24 July 1970

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MEMORANDUM FOR THE RECORD

SUBJECT: ARGO Meeting - Room 208 - EOB, 0930-1330, July 22, 1970

1. [redacted] chaired the meeting assisted by [redacted] 25X1

2. The first subject was a discussion led by ESSA on the manner by which tornadoes do their damage. A film presentation was included consisting of radar flown over a tornado and ESSA satellite tornado coverage -- with a few overlays of radar over the satellite imagery. Frames 15 minutes apart were used reducing the motion film coverage of-say-8 hours, for example, to seconds. The major point appeared to be further knowledge from the reported first impression years ago that damage was caused by drawing up surface objects into the center of the tornado - to the current understanding that the damage is caused by the winds at the edge of the tornados. These winds are normally counter-clockwise with 15% clockwise. They might consist of a 100 yards wide edge of a 2-mile-wide tornado. If the tornado is "tipped" on its side enough only one edge section will be damaging. Much of this information was determined by imagery of post-tornado swaths with straight, arcs or spiral paths of material left by these wind edges. [redacted] made an interesting comment on some writings by Myron Tribus (Ass't Sec'y Commerce who has been briefed here in NPIC and who, I believe, has just been appointed by the President as Head of a special interagency group on weather modification problems - which will face the decisions on whether "to seed or not to seed" (modify) a hurricane, etc., thus possibly causing damage suits against the U.S.). [redacted] commented that Tribus has recommended great caution on attempts to modify hurricanes, tornados, thunderstorms, etc. until we are sure we know enough of what we're doing. -- The ESSA rep said we might have a home TV weather channel in a few years (something like the channel continuously running the stock market reporting) which will give us continuous pictoral reporting (providing the viewer a chance to look at the weather for his area or the immediate area north, south, east, or west into which he may be driving - for example). 25X1 25X1

3. [redacted] OEP, reported that the head of the Disaster Working Group [redacted], OEP) had approved the report which will be final typed next week (thanks to the return from leave of his secretary - ??). The report will be given to the Office of The Chairman, ARGO, which will distribute it to all agencies. The report is unclassified and does not refer to its TKH annex which will be distributed in parallel with the report. This distribution should occur by August 3rd. Comments, if there are any more, of the receiving agencies should be made to Chairman 25X1 25X1

[redacted] 25X1

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ARGO by Aug. 13th or 14th. Final approval should occur at the September meeting of ARGO and the report forwarded to [redacted] will then transmit to the cabinet level for formal agreement. (ARGO file and past MRs contain references and comments on the disaster working group report.) -- [redacted] reported that OEP now had the budget and would begin construction of its SI/TK cleared center and its communications and information center (secure phone, wire services, presentation equipment, etc.).

4. There was limited discussion on the RBV (return beam vidicon) following comment by [redacted] that he'd been to Lockheed recently and found there were bugs in the system. He mentioned camera shifting particularly. He and [redacted] (TOPO Div. - USGS) talked about the planned correlation between ERTS-A, Skylab and aircraft imagery. Without [redacted] (absent) from NASA, discussion seemed rather inconclusive.

5. [redacted] presented his proposal for complete high altitude (U-2) coverage of the U.S. His proposal and recommendations are attached. Also attached is a related paper along similar lines written at NASA/Houston. [redacted] will obtain probable cost figures in a week or two. These figures will be given to user agencies for their consideration as they put in their requirements. The total requirements should be summed up in six or seven weeks for consideration at the next meeting.

6. A brief terms of reference paper was distributed by [redacted] and returned at end of meeting. Discussion did not indicate anyone's concern. Other than some minor points, Otto Guthe and I felt it was consistent with what we believe is policy. It will be considered again later when [redacted] has a chance to put his thoughts on ARGO together, following sub-cabinet talks on that subject.

7. [redacted] reported on his talks to date at sub-cabinet or ass't sec'y level. He covered all agencies so far except Commerce. They are: Transportation, State, Interior, NASA, State/AID, and Agriculture. He said the views on ARGO ranged from "most important" to complete indifference. He had been careful to stress that he was not selling ARGO. While not yet prepared to report, he said the degree of classification makes use difficult according to almost all user agencies. Other general views: 3 agencies said ARGO access important to them, - almost all felt it was the only device keeping attention focused on ERTS, - also most felt learning of present problems in handling classified systems gave them a start on future ERTS problems. Martin said he would make some recommendations on declassification to [redacted] Otto and I advised of current COMIREX reinterest in this question and the possible effect of SALT, prior experience of NSAM

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156 committee, etc. were mentioned. [redacted] had some thoughts that when ERTS System(s) are flying ARGO might no longer be needed - perhaps a single relationship could be established. He will make available a precis of his survey in September. 25X1

8. The Chairman's office will call members regarding time for the September meeting.

[redacted] 25X1

Attachment:
As stated (UNCLASSIFIED)

Distribution:
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3 - NPIC/TSG/APSD ([redacted] w/attach 25X1
4 - NPIC/TSG/RES/RSI[redacted], w/attach
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HIGH ALTITUDE AIRPHOTO COVERAGE
of the United States

Background

Between 1948 and 1958 nearly complete aerial photographic coverage of the United States was obtained by the Army Map Service from flight heights of 30,000 feet and above. These photographs have been utilized repeatedly by many organizations for cartographic and noncartographic purposes. However, they no longer represent timely coverage for large areas of the country.

Today the capability exists within the Government of obtaining photographs from altitudes of 60,000 feet and above. The performance of aerial cameras has been substantially improved, and new high resolution black and white and color responsive films can provide a far greater information content per exposure than was heretofore possible.

The first Earth Resources Technology Satellite (ERTS-A) is planned for launch in early 1972. Aerial photographs will provide spatial correlation and a large measure of "ground truth" which will simplify and expand the application of ERTS imagery for many users both within and outside the government.

Photographs taken at this time will provide a pictorial base for all users wishing to correlate their data with the 1970 census records.

It is therefore appropriate at this time to consider new high altitude coverage of the country using these new capabilities.

Department of Interior Requirements

Several bureaus of the Interior Department have indicated specific requirements or applications of high altitude photography.

- Geological Survey Topographic Division

  Aerotriangulation to establish horizontal control for mapping

  Image base for revising large scale topographic maps (1:24,000) in either line or orthophoto editions

  Image base for both recompilation and revision of medium scale maps (1:250,000) in either line or orthophoto editions

  A map supplement which, with minimal orientation data, can be distributed to the public without further processing

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- EROS Program Office

  Spatial correlation for ERTS imagery

  Spectral and geometric calibration for ERTS imagery

  Ground truth base for use with temporal ERTS coverage

  Image correlation with 1970 census data

- Bureau of Land Management

  Image base for land use classification of public lands

Other bureaus in the Interior Department have expressed a general interest in the use of high altitude photography if it were available

- Geological Survey Geologic Division
- Bureau of Mines
- National Park Service
- Fish and Wildlife Service
- Bureau of Outdoor Recreation
- Bureau of Indian Affairs

Applications in Other Departments

It is anticipated that other government agencies would also make extensive use of high altitude photography

- Census Bureau

  A permanent photographic record of the country to supplement the 1970 census

- Coast and Geodetic Survey

  Aerotriangulation to establish horizontal control, and chart compilation

- Department of Agriculture

  Image base for thematic mapping and resource inventories prepared by Forest Service, Soil Conservation Service, Commodity Stabilization Service, Agriculture Stabilization and Conservation Service

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- Corps of Engineers (civil works)

  Image base for mapping and construction planning

- Bureau of Public Roads

  Coverage of interstate highway network

Suggested Configuration

Department of Interior applications would be satisfied best by having simultaneous coverage flown in high resolution black and white and color infrared. Optimum utility would be obtained by having a photograph approximately centered over each 7.5-minute (1:24,000) map quadrangle. To produce this photography the following parameters are suggested:

- Flight configuration

  Altitude 20.55 km (67,500 ft)
  North South flights

- Cartographic camera

  Focal length 152 mm (6 inch)
  Format 23 x 23 cm (9 x 9 inch)
  Photo scale 1:135,000
  Forward overlap 55%
  Consecutive exposure spacing 13.9 km
  Sidelap 65%
  Flight line spacing 10.8 km
  Coverage per frame 30.8 x 30.8 km
  Camera type Wild, Zeiss (or equal)
  Film type - color infrared 2443 (or equal)

- Thematic camera *

  Focal length 305 mm (12 inch)
  Format 23 x 23 cm (9 x 9 inch)
  Photo scale 1:67,500
  Forward overlap 10%
  Consecutive exposure spacing 13.9 km
  Sidelap 30%
  Flight line spacing 10.8 km
  Coverage per frame 15.4 x 15.4 km
  Camera type - Zeiss (or equal)
  Film type - black and white 3404 (or equal)

* A 12 inch focal length, 9 x 18 inch format camera with 55% forward overlap and the 18 inch dimension in the line of flight is an acceptable alternative.

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- Processing and dissemination

  Processing must be accomplished in a controlled laboratory to preserve the geometry, resolution, and color quality of the photography

  Original film must be available on unclassified basis for use in making copies for government agencies and general public

  Availability of photography must be made known through normal indexing and publication procedures

Recommendations

- ARGO committee members should canvas the agencies they represent to determine applications, coverage requirements, and camera, film, and flight parameters
- The ARGO committee should prepare a definitive set of specifications incorporating as many requirements as possible
- The ARGO committee should exercise the means at its command to implement the recommended high altitude photography program
- Specific priorities for coverage should be established, but the target objective should be to obtain near complete coverage of the United States by 1972.

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Attachment to

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MEMORANDUM

Date: January 26, 1970

To: TF3/Chief, Aircraft Project Office

In reply refer to: TF3/M19-70

From: TF3/Manfred von Ehrenfried

Subject: Mapping the United States with the RB57F

Recently, I read a comment by [redacted] USGS, that it would take 1,500,000 pictures and ten years to map the United States. This statement was made in support of Earth Resources satellites. Although satellites certainly have a tremendous advantage in photographic coverage, lifetime, field-of-view, etc., the RB57F does provide a tremendous synoptic view of the earth at altitudes above 60,000 ft. and at a fraction of the cost. If you consider the time element, I would almost venture to say that we could probably even deliver the "goods" before the satellite.

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I think if more people in the User-Agencies were made aware of our high altitude capabilities, we could do more for the scientific community in the field of earth resources both national and international.

Perhaps you might desire to make more of them aware of the RB57F Program and its capabilities by making this proposal available to them.

How to map the 48 contiguous United States (Alaska and Hawaii too, if desired)

With the present team of some 20 Air Force, three NASA and four Contractors already "combat tested" in the Earth Resources Aircraft Program map the 48 States in a systematic, methodical manner with the RB57F. Consider the inputs of all the User Agencies and NASA Scientists in selecting cameras, films and filters, seasonal problems, terrain, etc.

Use the already proven concept of block-coverage from the five existing RB57F supporting Air Bases: Kirtland AFB, New Mexico, McClellan AFB, California, McCoy AFB, Florida, Wurtsmith AFB, Michigan and Ellington AFB, Texas. Deploy to any given base until most of the "blocks" within the 1000 nautical miles of that base are covered. Consideration would be given to such weather factors as "no snow on the ground," "cloud coverage less than 3/10ths" etc. For example: deploy to Wurtsmith AFB, Michigan during the summer in order to map the North and East when there is no snow on the ground and deploy to McCoy AFB, Florida, during the winter to map the South and Southwestern parts of the U.S.

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Most of our five bases are at the extremities of the U.S. so that we really have a 1000 nautical mile radius for about a half circle or an area of some 1,500,000 nautical miles^2, which is considerable. It is even very likely that we would not have to deploy to all five bases due to this layout. We have reached the Imperial Valley, Phoenix, Purdue, Tennessee Valley and others from Ellington AFB, Texas. This illustrates the tremendous flexibility of the RB57F. I would estimate that 25-50% of the U.S. could be mapped out of Houston, Texas. This of course, would greatly reduce the total cost. The cost estimate assumes that 20% of the U.S. is mapped from each base, which is conservative.

Since the RB57F became operational in July 1969, to the present, we have mapped about 9% of the U.S. at the leisure pace indicated below:

Mission	Date	Flights
100	7/14-21/69	3
101	7/30-8/15-69	9
103	8/25-9/17/69	8
106	9/29-10/2/69	3
110	8/19/69	1
112	19/7-16/69	5
116	12/3-7/69	3
118	1/6-1/15-70	4

Total to date -- 36

At this pace (6 flights/month) we would have mapped an area equal to that of the 48 States in 400 flights. This is because we are not managing our flights to cover maximum size blocks but to fly selected test sites with some block coverage in the area. Consider, for example, the difference between Mission 106 where we flew four test sites for about 19,000 nm^2 and Mission 112 where we mapped about 80% of the State of Florida. Had we attempted maximum area of coverage, we could have mapped 432,000 nm^2 or 19% of the U.S. in this same time.

A maximum area of block coverage is 100 nm by 120 nm or 11 flight lines. This represents the best size area for mapping with 10 nm flight centers to obtain 60% front overlap by 30% side overlap on the RC-8 cameras and accepting whatever overlap results on the KA50 and Hasselblads depending on lens sizes flown. This would provide 12,000 nm^2 each flight on about 1/2% of the U.S. each flight. The end results can be seen in the next chart.

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Given: Map the 48 contiguous United States

With:
- 2 RC-8 Wild-Heerbrugg Metric Cameras - Color and Color IR
- 1 KA50 Chicago Aerial Wide Angle Camera - B&W
- 6 Hasselblads-Multispectral

How:
- Block Coverage Concept - NASA/Air Force RB57F
- 100 nm by 120 nm Block Areas (12,000 nm^2)
- 60,000 ft. MSL
- 11 Flight Lines Per Block - 10 nm apart
- Clear Areas Only (.3 cloud coverage or less)
- 5 AF Base Staging Concept
- Deployments based on season and weather
- 190 flights - 9 flights per month - 21 months

Product:
- 1605 pictures per block area - color, color IR and Multispectral and B&W
- 440 RC-8, 165 KA50, 1000 Hasselblads per flight
- 305,000 pictures total

Cost: (over entire 21-month period - 27 people on team) Note 1
- 190 flights of 6 hours at [redacted]r (see note 2) 25X1
- 10-C141 support airlifts for deployments
- Per diem for 16 GI's and 4 AF Officers
- Per diem for 3 NASA and 4 Contractors
- 1710 Rolls of Film and Processing
- Airfare for NASA and Contractors (see note 3)
- Data Tapes - 38D (2 each flight)
- Spare parts for instrument pallet
- Contingency money

(note 4) -- Total [redacted]

Note 1 - Salaries not included since already accounted for.
Note 2 - The [redacted] for the aircraft includes the use of 16 airmen and 4 officers for the entire period. This price also includes repairs on the aircrafts. 25X1
Note 3 - All Air Force Personnel will travel in C141 airlift.
Note 4 - Total cost is about $1/$nm^2$

Summary

In my opinion, most people think of aerial photography in terms of aircraft used five or ten years ago. Furthermore, most people never heard of the RB57F and if they did, do not know of its capabilities. I believe we should make all the User Agencies more aware of what we can do and for how little in the way of manpower and expenditures. For a little more, we could fly the RS-7[redacted] and possibly replace the Radiometer Spectromet- 25X1

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with more cameras; perhaps some new high altitude cameras being built for the Air Force. (Reference: High Altitude Panoramic Airborne Camera being developed by Bourns/CAI, Inc.)

With regard to our present Earth Resources missions, it is possible we could include the requirements of the Principal Investigators for Earth Resources sites with the overall requirement to map the U.S. Certainly, enough trade offs and compromises could be made in order to satisfy most of the requirements. We could possibly fly two or three of the nine cameras with the same film/filter combinations and vary the remaining cameras for varied scientific reasons.

Plan the missions based on an average flight time and camera load of six hours of which three and one-half hours is data time. This works out to blocks of coverage 100 nm by 120 nm which is the size of many blocks we have already flown.

In summary, map the United States today, tomorrow the world. (In conjunction with international agreements, of course!)

TK2: ljc 1-21-70

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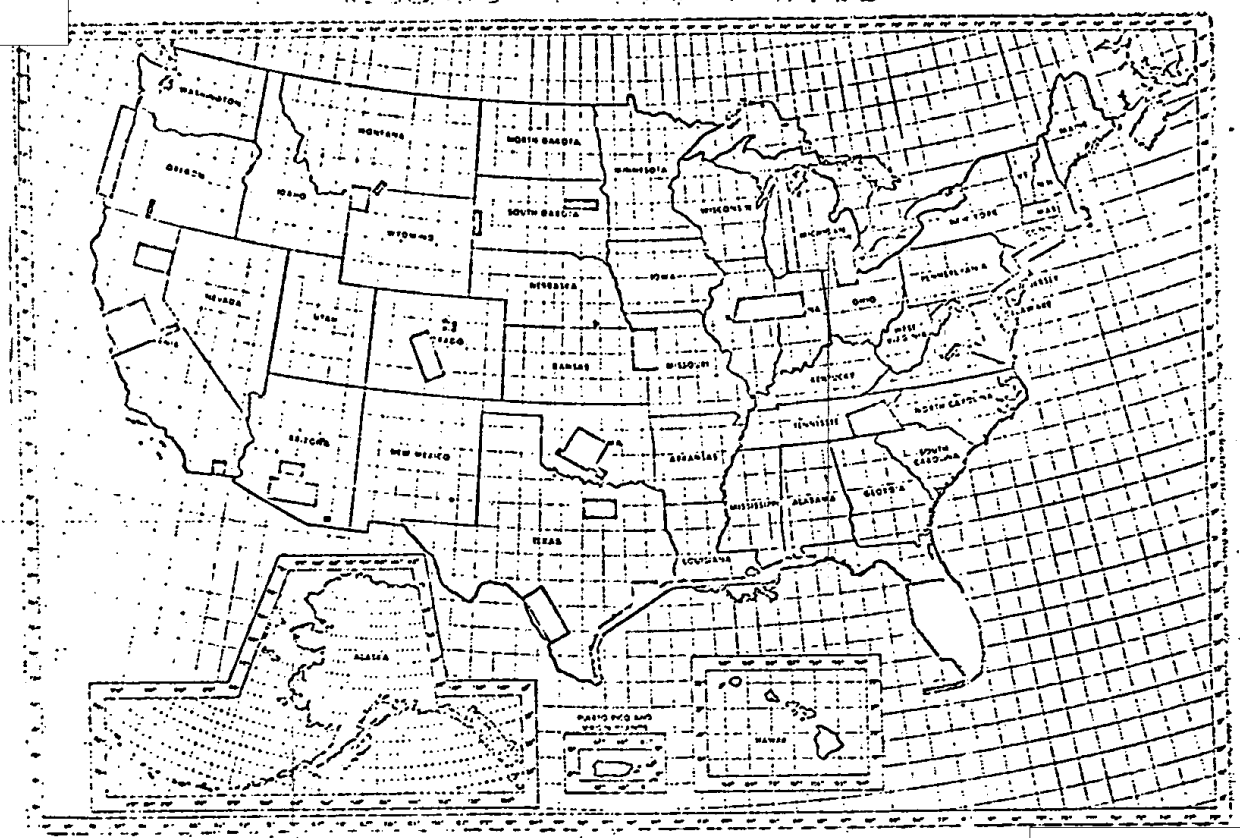
RB57F COVERAGE
JUNE 1969 THRU JANUARY 1970
(238,150 N MI^2) MAPPED



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1 October 1970

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MEMORANDUM FOR THE RECORD

SUBJECT: ARGO Meeting, Room 213, EOB, 29 September 1970, 10:00 A.M. - 1:30 P.M.

1. [redacted] OSI, chaired the meeting. He called the members attention to flying restrictions imposed by their security clearances and the need, before flying, to check with their special security officers. He also requested that attendee's names be called in at least a day ahead of meetings. 25X1

2. Eastman-Kodak personnel briefed ARGO on EK films for exposure and duping, and processing equipments. [redacted] 25X1 [redacted] is preparing a summary of this and I will distribute it separately. I would comment here that the state-of-the-art was obviously strengthened by the long intelligence interest/use and that the benefits to non-intelligence were apparent in the briefing. 25X1

3. USGS [redacted] briefed on the use of the KH-4 in 1/250,000 map revision. He pointed out the history of the turnover of the responsibility of map revision from Army to the U.S. Geodetic Survey in late 40's and the current 5 to 8 years revision program. He also briefed on the 1/24,000 "Interim Revision" Program. The KH-4 in the 1/250,000 revision is blown up 2X, rectified, and then mosaiced. In the 1/24,000 Interim program of detailed revision, the KC6 camera flown at 40,000 feet is providing good detailed imagery when blown up. There followed some discussion of the utility of other systems - the IRIS with a modified rectifier - flying the 6" at 70,000 feet (NRO - [redacted] - believes there is some already flown and he'll look it up). [redacted] is preparing a summary of the discussion of the various systems and I will distribute it separately. Some discussion was held on the [redacted] camera satisfying 1/250,000 needs. NRO [redacted] stated that he was not sure it "would have sufficient resolution, nor that there would be enough film as only 2,000 feet are available four times a year and DOD might use it all up). This will be up to COMIREX-MC&G. NRO is interested in possible unclassified ERTS use of the [redacted] camera in order to cut cost of each item. 25X1 25X1 25X1 25X1 25X1 25X1

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SUBJECT: ARGO Meeting, 29 September 1970

4. [redacted] OST, provided some initial costs for the U-2's and RB57's in connection with domestic coverage requirements recently proposed by [redacted] USGS.

a. U-2 - 50 flying hours per month for 1 year.

$250,000 if flown by Air Force.

$500,000 if flown by Commercial contract.

b. RB57 - 50 flying hours per month for 1 year.

$600,000 (Air Force)

$1,500,000 (Commercial contract)

The above costs reflect the lack of certain costs in Air Force figures (TDY's, perdiems, management, etc.). Possible 5 U-2's available by June 1971 and possible 8 RB57's by same date. An alternative, if Interior budget can't swing would be to obtain available U-2 IRIS coverage and the RB57's would be stored. Some discussion of U-2 compared to RB57 occurred involving U-2 carries one system versus RB57 more than one, isolation mount requirements (or not), and it was felt by NRO that the systems were roughly comparable.

5. "Fascinating" discussion of ARGO charter proposal. [redacted] handled for Agency. We (intelligence - CIA) had no problem but DIA felt that ARGO might impinge on MC&G role (no such intention - WRL), NASA feared its relations to NRP might be affected (no such intention - WRL), etc. Also, some ancient and classic (and understandable although invalid) fears by Commerce (and others) revealed a concern that after stepping into an intelligence relationship there were now elements of "control" appearing.

All seemed "happy" with result: That the DIA/MC&G concern would be disposed of by a separate memorandum of agreement - and fears of "management", "control", and "restriction" would be allayed by a further revision of the charter to "soften" some verbs and include a "tone" of fostering the relationship of the civilian agencies to the intelligence community in order to obtain the intended benefits.

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SUBJECT: ARGO Meeting, 29 September 1970

6. A very brief discussion at a late hour was held on the troubled Disaster Working Group report. The report, requested by [redacted] OEP Chief, and now surprisingly set aside by OEP is under study in OMB. If OMB supports the study OEP may become responsible as planned or some other agency may be so assigned. [redacted] is supporting through the domestic side of the White House Staff, among other channels. [redacted] believes OMB views may be known shortly. He commented that the White House Staffers on domestic side have been looking for ideas and probably would be sympathetic to the proposal.

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[redacted]

ARGO Representative

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8 October 1970

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MEMORANDUM FOR THE RECORD

SUBJECT: Steering Committee/ARGO Meeting, 29 September 1970

1. [redacted] and I attended the 29 September 1970 meeting of the Steering Committee/ARGO. [redacted] chaired the meeting which began at 1000 hours in Room 213 of the Executive Office Building.

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2. First on the agenda was a presentation by Eastman Kodak TK cleared representatives concerning the use of color film type SO-242. EK recommended the system approach in its use; that is, proper Kodak chemistry and EK processing equipment should be utilized. This is the only approach in which customer problems can be readily solved. At present EK has no recommended processing cycle for its SO-242 but one is expected in approximately three weeks. Examples of SO-121 and SO-242 imagery were displayed. Film type SO-360 is the only film commercially available that is recommended for use with SO-242 in the generation of color duplicate positives. SO-360 can be processed in an EK Versamat processor at a speed of nine feet per minute. EK is working to develop a color duplicating material which is more compatible (than SO-360) with SO-242. Such a product may not be available for a few years, however.

The concept of making a black and white duplicate negative of the SO-242 green record layer was discussed. This specially filtered DN can then be employed as ~~any standard dupe negative~~ for the generation of duplicate positives.

It was announced that film type SO-180 has been discontinued, its replacement 3443 has improved keeping qualities.

For those interested in a color negative system, film type 2445 was mentioned. This material offers a greater exposure latitude than reversal products, however, its larger grain size and lower resolving power may prohibit its use in high altitude acquisition systems.

Direct duplicating film SO-369 has not received much use since it was put on the market. It was stated that persons who have a need for such a material should not overlook it.

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SUBJECT: Steering Committee/ARGO Meeting, 29 September 1970

A recent addition to the EK commercial product line is 1717 Polycontrast Paper which is water resistant. It was mentioned that in the near future most color papers will be on a water resistant base support.

It was stated that SO-349 is now officially 3414 and SO-236 is now termed 1414. Film type 1414 is the ultra-thin base (UTB) version of 3414 which is a standard thin base material (STB). Both can be processed on an EK Versamat machine to which a stophath cabinet has been added. Printing from these materials can be accomplished on an EK Niagara Printer utilizing 2430 duplicating film. 3404, our old work base, has been discontinued; its replacement is the above mentioned 3414.

A flow chart of a typical processing system was presented along with descriptions of the following Eastman Kodak equipment as it applied:

Film Pre-Inspection Table
Fultron Film Processor Model III-B
Editing Table Model II, Motor Wind
Delaware Portable Film Titler Model III
Denver Film Editing Unit (Portable)
Denver Densitometer Unit (fits unit above)
Niagara Printer (kits available to modify unit for color)
Rainbow Continuous Printer (for color)
Colorado Printer (continuous for color)
Seneca Step and Repeat Printer
Saranac Drum Printer
Beacon Precision Enlarger (3X to 153X)

This presentation concluded Eastman's portion of the meeting.

3. [redacted] of the USGS Special Projects Office, Reston, Va., gave a presentation of the Standard Revision of the 1:250,000 scale base maps originally compiled by AMS in the 1940's and early 1950's. It is the aim of the USGS to revise these maps every eight years in rural areas and every five years in urban areas. This is presently being accomplished in a monoscopic effort via KH-4 imagery overlays produced using the Gamma Rectifier and a scale reduction to 1:250,000 (gamma rectifier out put with KH-4 is 1:150,000). USGS is in need of KH-4 coverage (they are up to date with what has been flown thus far) and is considering the use of low altitude (70,000 ft.) aircraft coverage to fill in the gaps. The 12 inch focal length metric camera to be flown [redacted] will satisfy their mapping criteria, however, the question of how much domestic coverage

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SUBJECT: Steering Committee/ARGO Meeting, 29 September 1970

will be flown was raised. [redacted] stated that the unit was presently film limited and will produce about 2,000 frames per mission. He could not answer the question of how much of the film load DOD will employ operationally and how much will be used domestically. Although the film load meets existing requirements, [redacted] is investigating the need for its increase. He mentioned also that the system was weight limited and such an increase even if justified would be difficult to accommodate.

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4. [redacted] presented the following costs pertaining to USAF and commercial flying/maintenance of the U-2 and RB-57 reconnaissance aircraft. These figures are the costs per year for an aircraft with a flying schedule of 50 hours (take off to landing) per month.

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USAF owned/operated	U-2--------$250.000
Commercial owned/operated	U-2--------$500,000
USAF owned/operated	RB-57------$600,000
Commercial owned/operated	RB-57----$1,500,000

Some of the items which account for the cost differential are:

a. USAF pays no landing fees.
b. USAF pays no hanger costs.
c. USAF pays no TDY.

The above rates are those charged government agencies when the USAF flies a mission for said agency. By June of 1971 a maximum of five U-2's and eight RB-57's may be available. NASA now has one RB-57 and is negotiating for a second. [redacted] stated that all USAF RB-57's are either going into flyable storage or to the bone yard by next June. This accounts for the aforementioned availability of the aircraft to other government agencies or civilian interests. The cost of camera installation (aircraft hatch modification, when required) is not reflected in these figures and it was mentioned that such modifications could run over a half million dollars. The cost of operating a usable aircraft is thus increased by a goodly amount. (Rumor has it that the vibration free mount which NASA developed for its RB-57 cost them almost one million dollars.)

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The additional comment was made that the U-2C has a tendency to porpoise.

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SUBJECT: Steering Committee/ARGO Meeting, 29 September 1970.

5. The last item of business was a review of the final edition of the proposed ARGO charter. The review surfaced several questions concerning the charter's connotation which turned out to be 180 degrees from its intended meaning. will rework the proposal. The meeting was adjourned at approximately 1400 hours.

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Acting Chief, Section II
IEB/APSD/TSG/NPIC

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19 October 1970

MEMORANDUM FOR THE RECORD

SUBJECT: ARGO Meeting, 29 September 1970

1. I had indicated to regular distributees that I would add to my regular notes of this meeting by distributing separately notes of [redacted] TSSG, on EKs color film briefing to ARGO. They follow:

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2. First on the agenda was a presentation by Eastman Kodak TK cleared representatives concerning the use of color film type SO-242. EK recommended the system approach in its use; that is, proper Kodak chemistry and EK processing equipment should be utilized. This is the only approach in which customer problems can be readily solved. At present EK has no recommended processing cycle for its SO-242 but one is expected in approximately three weeks. Examples of SO-121 and SO-242 imagery were displayed. Film type SO-360 is the only film commercially available that is recommended for use with SO-242 in the generation of color duplicate positives. SO-360 can be processed in an EK Versamat processor at a speed of nine feet per minute. EK is working to develop a color duplicating material which is more compatible (than SO-360) with SO-242. Such a product may not be available for a few years, however.

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A recent addition to the EK commercial product line is 1717 Polycontrast Paper which is water resistant. It was mentioned that in the near future most color papers will be on a water resistant base support.

It was stated that SO-349 is now officially 3414 and SO-236 is now termed 1414. Film type 1414 is the ultra-thin base (UTB) version of 3414 which is a standard thin base material (STB). Both can be processed on an EK Versamat machine to which a stopbath cabinet has been added. Printing from these materials can be accomplished on an EK Niagara Printer utilizing 2430 duplicating film. 3404, our old work base, has been discontinued; its replacement is the above mentioned 3414.

A flow chart of a typical processing system was presented along with descriptions of the folbwing Eastman Kodak equipment as it applied:

Film Pre-Inspection Table
Fultron Film Processor Model III-B
Editing Table Model II, Motor Wind
Delaware Portable Film Titler Model III
Denver Film Editing Unit (Portable)
Denver Densitometer Unit (fits unit above)
Niagara Printer (kits available to modify unit for color)
Rainbow Continuous Printer (for color)
Colorado Printer (continuous for color)
Seneca Step and Repeat Printer
Saranac Drum Printer
Beacon Precision Enlarger (3X to 153X)

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ARGO Representative

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4 November 1970

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MEMORANDUM FOR THE RECORD

SUBJECT: ARGO Meeting - Tuesday 10:00 A.M. to 1:00 P.M. - November 3, 1970 - Room 208, EOB

OST, Chairman ARGO, opened the meeting. With no discussion and in response to a question he advised that no action was required by recipients of the ARGO Charter recently distributed under covering letter from Dr. David, President's Science Advisor. He advised of changes in the agenda to eliminate an ESSA briefing on Utilization of U-2 Photography of the Sierra Nevada snow fields (see Agenda attached).

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KH-4B Color Film - Geological Application

(OSP) introduced (contractor) who presented an overly detailed 1 1/2 hour briefing on subject. None-the-less it was interesting, informative and excellent - particularly as it was less than two months in the making. The 4B/SO-242 film was used in stereo with 3404 B&W. Mission 1108 was used for 3 areas of the Soviet Union and China. Information sought was geological in character and applications were made to mineral/petroleum exploration indications.

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Problems were encountered with lack of ground truth elements but maps were found which helped. The briefer commented that a little ground truth (other sources? - WRL) would allow him in the case of a China petroleum area to make "good" estimates on reserves in that area.

He pointed out that 15-20' resolution was good enough and he would trade-off better resolution for color (in the type of problems he addressed - WRL). He also stated that views from space give better geological perspective which allow targeting of specific areas for further work by lower level platforms, magnetometers, etc.

The contractor's report will be distributed in January, 1971.

Red Dot Photography

OSP, briefed on Red Dot photography. Red Dot photography is test photography by Delta III/U-2 borne camera at 65,000'. The tests are on new films and photo techniques and have been conducted for a "number" of years. NPIC provides the mission coverage plots. EK conducts the missions, flight planning, etc.

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The purpose of the presentation was to invite/~~allow requirements~~ from the "peaceful" agencies via ARGO that testings be done over areas of use and interest to them. [redacted] USGS, promptly took advantage with request for coverage of lunar landing test sites in Arizona (in color). The Red Dot flights contain both color and B&W. Also, technology and techniques could be made available to the agencies.

NPIC has made the index available at Reston. The information is classified Secret. Some discussion (to be resolved by Security) about unclassified use occurred. [redacted] mentioned that he had asked NPIC to update the index with the last 8 missions (I checked and found we had the requirement and asked that results be sent to Reston). Also there was some discussion on who would do the rectification - this will be checked (ACIC or TOPOCOM?) by [redacted]

Intelligence Briefing on Results of Color Task Force.

[redacted] OSP, gave a briefing on results to date of the NRO Color Task Force. This information is well disseminated in NPIC

Other Business

It was noted that an EK report on spectral reflectance off soils would be distributed soon.

[redacted]

ARGO Representative

Attachment:
Agenda for November 3, 1970
Meeting of ARGO Steering Committee
TS TKH (WORKING PAPER)

Distribution:
Copy 1 - NPIC/PPBS, w/attach
2 - NPIC/TSG [redacted] w/o attach
3 - NPIC/TSG [redacted] w/o attach
4 - NPIC/IEG [redacted], w/o attach

[redacted]

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EXECUTIVE OFFICE OF THE PRESIDENT

OFFICE OF SCIENCE AND TECHNOLOGY

WASHINGTON, D.C. 20506

WORKING PAPER

Attachment to

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October 12, 1970

MEMORANDUM FOR

ARGO Committee

SUBJECT: Agenda for November 3, 1970 Meeting

The ARGO Steering Committee will meet from 10:00 am to 1:00 pm in Room 208, EOB, on November 3, 1970. I hope you will attend.

We are planning that the agenda for this meeting will be composed of the following items:

A. ESSA briefing on the Utilization of the U-2 Photography of the Sierra Nevada snow fields to include:

1. strength and weaknesses of the coverage
2. accuracy of information using the U-2 coverage and with conventional data
3. cost of using the U-2 data
4. value of the data in terms of decisions made to include reduction of flooding, water saved in reservoirs, etc.

B. Interpretation of KH-4 color photography for geological application: [redacted] (contractor to CIA).

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C. Availability of Red-Dot photography: [redacted] (CIA).

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D. Unfinished Business.

If you wish other matters considered please call [redacted] (395-3326).

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Color Task Force Briefing -

EXCLUDED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION

[redacted]

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It is requested that the names of all persons attending the Steering Committee meeting be furnished by October 30, 1970 so that the White House security office may be furnished a complete list of names to prevent members being inconvenienced in gaining access to the building.

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Chairman
ARGO Committee

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WORKING PAPER

Brief Highlights
COMIREX Meeting
Auditorium Bldg. 213
1000 Thursday, 7 Jan. 71

Briefings: [redacted] NRO, briefed on the [redacted] project. Much information has already been available in NPIC and to its [redacted] project officers, but some points in [redacted] briefing: The question of the difference between 10' resolution (radar) and 10' resolution (photo) was discussed and (at least to me - WRL) needs further clarification -- in order that one's expectations from radar imagery will not be based, insofar as resolution characteristics are concerned, upon experience with photo imagery resolution which provides more information. - Missions will be flown at night. - Care will be taken to experiment with "unknown" target characteristics, one of the reasons for using foreign targets. - Oblique will be primarily 6.7 nm to 20 nm coverage from radar at 30° to 60°. - Range 5 to 65 nm, either side. - Swath 5 nm. - Recording capacity 2500 nm. - Location accuracy 3000' (not too clear on this - WRL). - System uses antenna feeding cathode ray tube display which is recorded on film - then ground correlations producing film for delivery to NPIC. February/March '71 - domestic tests still planned - with Cuban missions for April (political permission seems likely). - Cuban missions are expected to be 1 every 3 days for 45 days maximum. - Later satellite application is expected at 218 nm altitude at 10' (radar) resolution with no sun angle or weather interference except severe thunderstorms.

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Minutes-114: Approved

Minutes-115: Publish week of 11th with comments due by Friday, 15th to Executive Secretary.

Satellite Schedule: Copy attached.

EXRAND Objectives: Approved. EXRAND plans to update every year.

Crisis Task Team: In [redacted] absence [redacted] gave status report. (Believe addresses are familiar with status - WRL) - [redacted] referred to parallel community effort on indications/warning lists for Near Real Time.

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Obliquity: [redacted] obliquity presentation to be given at next COMIREX meeting on 21 January 1971.

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[redacted]

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Indochina Requirement: Will be redrafted and placed on next COMIREX agenda for action. Question concerns frequency of [redacted] coverage - the necessity, reported by Inlow, that policy makers need to know, for example, that "all's quiet" can be verified. Change would be from quarterly coverage of built-up areas and semiannual for other areas to monthly (built-up) and quarterly (others).

OPIC-A: DIA [redacted] reported that the 67th Recce Tech will be deactivated. Present plans call for OPIC-A to be transferred to the 548th in Hawaii. The 67th will carry OPIC-A until transfer can be effected to Hawaii. Approval will be requested of COMIREX [redacted] queried - before or after the fact?). [redacted] requested the AF representative to report at next meeting on the processing of materials (Giant Scale and others) and transmission to Washington (There had been an estimate of one day's delay).

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EXSUBCOM: [redacted] reported that he has or is planning a paper for publication on 1st and 2nd phase requirements for exploitation in North Korea. It is based upon intelligence problems of the community - he mentioned CCPC, inter alia. Schadegg commented that he hoped it would serve also for collection requirements.

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[redacted] also reported that 21 people were scheduled for a trip to EK on Sunday, 10 January 1971 for a [redacted] planning session.

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After COMIREX: [redacted] and WRL met with [redacted] in IEG. Dino presented feedback reporting and Inlow also received an IIS demonstration. It was agreed to return to IEG after next COMIREX for further discussions/briefings probably getting into IEG's future substantive reporting and requirements.

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WRL

Attachment:
January Satellite Operations
Schedule

[redacted]

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[redacted] 25X1

19 January 1971

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MEMORANDUM FOR: THE RECORD

SUBJECT : ARGO Meeting, 10:00 a.m. to 1:00 p.m., Room 208, EOB, January 13, 1971

1. [redacted], Chairman, opened the meeting with an agenda item 25X1
covering the attachment (proposed declassification of KH-4 DISIC [redacted] 25X1
[redacted] to meet civil requirements). The attachment is self- 25X1
explanatory and is not a distributed paper (no mention should be made of it as all copies except this one were collected). Considerable discussion occurred regarding accuracy of statements on requirements for better-than-ERTS system, resolution needed, timeliness, impact of budgets on ability to use electronic information versus conversion of ERTS to imagery, impact on COMIREX requirements, etc. Otto Guthe did an excellent job guiding the group back to a responsible beaurocratic approach. The OST approach would have taken the recommendations (after revision and staffing) to the NSC staff, 40 committee and OMB. Otto succeeded in getting the subject directed toward the DCI Representative [redacted], COMIREX (SDWG and MCWG), 25X1
USIB, EXCOM and the NSAM 156 Committee. This is to be done after it is determined that the need exists and is matched against the systems proposed for use. This will require a small working group.

2. The next item dealt with declassification of Red Dot indexes and imagery - ditto other camera systems. A request will be made to [redacted] 25X1
as DCI Rep to be staffed out by [redacted] SDWG and Security. It is 25X1
expected that this can be done with film-cropping, enlarging/reducing and referring only to high altitude photography - not to U-2. A problem brought up by [redacted] (Head - NSA Earth Resources) concerned his inability 25X1
to tell requesters of funds for atmospheric studies (degradation of imagery due to altitude) that the ~~job's been done.~~ [redacted] (NPIC) and [redacted] 25X1
[redacted] OSP) will meet with [redacted] to determine which specific past analysis 25X1
is involved and, when identified, [redacted] will request its declassification 25X1
through proper channels. This was followed by similar discussion with DIA on possible declassification of the AN/APQ93 radar. On radar it seemed that the breakpoint for classification is (a) 30' resolution minimum with planimetric and (b) exclusive of stereo using interferometer technique. There are techniques to use the AN/APQ93 at less efficient levels to avoid classification. DIA has responsibility for this one.

3. The NOAA (formerly ESSA) briefing in snow fields was rather hasty regarding use of U-2 imagery to determine flood levels. (Briefers were away and the NOAA ARGO member had just seen their report before the meeting). Two points I recall covered (a) the need for color imagery to distinguish between some clouds and snow conflicts and (b) an example of savings. The latter case involved a decision not to release water from a California

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dam/reservoir to make room for flood control storage in view of an originally estimated heavy flood back-up from snowfields. Photography had given a different and lesser estimate which turned out to be accurate, saving an estimated $5 to $7 million in damage from deliberate flooding plus loss of water.

4. [redacted] (NRO) reported four Q28/6" Army systems are standing at Forbes AFB and are available for civil requirements if the civil requester has the funds to pay for the use. USGS-Reston has been receiving excellent film from these systems - taken for training purposes. 25X1

[redacted] 25X1

ARGO Representative
NPIC

Distribution:
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3 - NPIC/TSG [redacted] 25X1
4 - NPIC/IEG
5 - TSG [redacted] 25X1

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Background

The National Academy of Science sponsored a summer study at Woods Hole, Massachusetts, during the Summer of 1967 to establish the requirements for remote sensing for civil applications. The attached chart, which was derived from that study, shows that the civil applications to which imagery is applicable all require 100 foot ground resolution or better. The only exception to this is for atmospheric studies. NASA currently estimates that the best ground resolution to be derived from ERTS A&B is 300 to 500 feet. Therefore, it would appear that other means for meeting the earth resources requirements should be investigated.

1/13/71
This draft was distributed & recalled during ARGO meeting today. It will be changed & redistributed. No copies (except this one) are out. DIs do not refer to this copy — nor make a copy.
WRL

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Through the ARGO Steering Committee and other mechanisms, such as the NASA/DOD Space Activities Coordinating Committee, Federal civil agencies and NASA are familiar with the photographic capabilities of the NRP. The KH-4 system and the U-2 and SR-71 aircraft programs have been used to meet some mapping and disaster applications of the Departments of the Interior and Agriculture and the Office of Emergency Preparedness. As a result of these efforts and other studies, some of which have been sponsored by the intelligence community, it appeared that the KH-4 system could meet the requirements for ERTS C and D. The NRO offered NASA the option to purchase two additional KH-4 systems in January-February 1970; however, OMB declined to grant NASA the funds to do this, based on the premise that the world is already photographed by this system, therefore additional systems are not needed and one has only to downgrade the classification and release the photography of the areas desired. However, the current 0.1 milliradian resolution restrictions of NSAM 156 prohibit release of this photography. [redacted] has proposed to USIB a revision of NSAM 156 to 20 meter ground resolution now and 5 meter ground resolution by 1975 which would make the DISIC film available now and the 24-inch panoramic film available in 1975.

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The user agencies have applied aerial photography to their problems for a considerable period of time; they are equipped and

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have the expertise for these applications. They do not have the expertise nor the equipment to directly apply the electronic readout data to their problems in most cases. This will require that the electronic readout data will have to be converted to imagery before it can be used.

In summary, the current situation facing the Earth Resources Program is:

a. The ERTS A satellite will not meet requirements in resolution for most of the proposed applications.

b. The user agencies are being organized and have requested funds to apply space data to problem areas in 1972.

c. The users have worked with aerial photography and have the expertise to apply this type of data to their operations. They have little experience and are not presently equipped to apply electronic readout data directly to many of their applications.

d. The NRP satellite frame camera systems and the aircraft camera systems can meet many of the civil requirements.

e. NSAM 156 would have to be modified along the lines proposed by [redacted] to permit the application of a portion of the NRP camera systems to the civil agencies requirements.

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[redacted]

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The NRP camera systems that are best suited to the immediate application of earth resources problems are the frame cameras on the KH-4 systems. 25X1

These cameras are primarily used for vehicle altitude determination and for defense mapping, charting and geodesy. They serve also the purpose of providing some geometric calibration to the panoramic and strip camera systems which are of prime interest to the intelligence community.

Specifically, the NRP cameras which appear to have the characteristics to meet the near-term earth resources requirements are:

a. The KH-4 DISIC 3-inch focal-length, frame camera, which has a 4.5-inch by 4.5-inch format and covers an area 126 by 126 nm per frame at a ground resolution of 120 feet. NASA is procuring two of these cameras for use in Apollo 15 and 16 lunar mapping programs. The ITEK 24-inch optical bar panoramic cameras will also be flown on Apollo 15 and 16.

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c. ITEK 24-inch, optical bar, panoramic camera, which has a 4-inch by 2.5 foot format. This camera is designed for high-altitude aircraft.

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d. ITEK 13-inch panoramic camera, which has a 70 mm by 2.5 foot format.

These cameras are capable of providing coverage of large areas with black and white, color photography. The color capability of the DISIC and 12-inch frame cameras is limited, due to lens speed and the filters on these cameras. It is possible, however, with some modification to acquire color photography with these cameras.

The alternatives for using NRP cameras and systems to fulfill earth resources needs are limited use of NRP satellite camera systems and NRP aircraft systems. For NRP satellite systems, assuming that the USIB and the 40 Committee agree to the NSAM 156 changes proposed by the Director of the NRO, then it would be possible to test the NASA lunar frame camera in earth orbit. One method for doing this could be the announcement that the NASA lunar frame camera, which in reality is the KH-4 DISIC, would be tested in earth orbit as a "piggyback" on a DOD program starting this spring. Since the DISIC normally obtains photographic coverage of the United States for engineering purposes, the cost to the NRP of doing this would be the cost of processing an extra copy of this coverage.

Therefore, it too could be presented as a NASA piggyback payload on a DOD program. This would require at least a modification to increase its film load if DOD and earth resources requirements were to be met without conflicts on

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scheduling the coverage. The cost of this modification is a one-time cost of $1.5M. The lens should be modified if color photography is desired. The cost of this would be _____ for development and a recurring increase in cost of _____ for each camera equipped for color photography.

Excess NRP U-2C aircraft are an additional means of supporting the earth resources applications. NASA is currently negotiating for two U-2C aircraft to carry experimental payloads. If the same type of arrangement could be made, say between the Department of the Interior and DOD, then a program could be started to acquire high-altitude photography of the United States on a regular basis. NRP training flights have been used for this purpose in the past. However, it would appear that this effort would be more efficient if it were managed and funded by the civil users. It is estimated that operational costs of the U-2 are approximately $200 an hour. The modification to put a stable-mount for cartographic frame cameras in the U-2 is estimated at $1M per aircraft.

It is recommended that consideration be given to the following:

a. Declassification of the KH-4 DISIC [redacted] 25X1

cameras with appropriate cover; i.e., NASA/DOD piggyback.

[redacted]

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b. These cameras be credited as "piggyback" payloads with NASA/user agencies to pay for any required modification.

c. An announcement that the NASA lunar frame camera (DISIC) will be tested in earth orbit on a DOD program this spring.

d. Two or three excess U-2C aircraft be turned over to the Department of the Interior for use in the United States. (Department of the Interior would have to fund this operation.)

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NPIC/TSG/RED/SRB-005-71
10 February 1971

MEMORANDUM FOR THE RECORD

SUBJECT: ERTS and SKYLAB Meeting

1. On February 2 thru 5, 1971 a meeting was held at the Goddard Space Flight Center of NASA for potential investigators in the ERTS and SKYLAB programs. This memo outlines the proceedings of this meeting.

2. The purpose of the meeting was to provide background information and to answer questions of potential investigators of data supplied by the two programs. Approximately 600 persons attended the ERTS portion of the meeting and about 400 attended the SKYLAB portion. Representatives were present from Federal and state agencies, private industry, academic institutions, and 26 foreign countries.

3. The first Earth Resources Technology Satellite (ERTS-A) is scheduled for launch in March 1972. It will image the entire continental United States every 18 days with return beam vidicons looking at three parts of the visible [redacted] spectrum and a multispectral scanner viewing four bands [redacted] Thus seven individual images will be taken of each 100 by 100 nautical mile area. Up to 188 sets of seven images can be taken each day. About 44 sets will be used for U.S. coverage so that 144 remain for imaging other areas of interest. Data will also be gathered from remote, widely distributed ground sensors that can measure temperature, wind velocity, water velocity, etc. ERTS-B will be launched about a year later and will essentially duplicate the feat of ERTS-A except that if both satellites continue to function, complete coverage will occur every 9 days. 25X1 25X1

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SUBJECT: ERTS and SKYLAB Meeting

[redacted] 25X1

5. The ground resolution of ERTS is at best about 200 feet. In this respect it is a far cry from the quality of material we are accustomed to. However, because the imagery is multispectral and includes various IR frequencies and because of the frequency of coverage, it could provide useful intelligence information. Perhaps of greater value to NPIC is the experience the ERTS program can provide in handling near real time imagery. In one year's time, one of the ERTS satellites can cover about five billion square miles of the earth. Techniques are already being developed to interpret, store, display and manipulate this tremendous volume of imagery. I believe that NPIC and particularly RED should maintain close contact with the program to benefit from the planning that has already gone into the program and from the experience that will acrue. Purdue University has an electronic display to view ERTS imagery and the technology used in this system may be applicable to near real time imagery.

[redacted] 25X1

Systems Research Branch, RED

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1 - Project Officer
1 - SRB Chrono

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12 May 1971
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MEMORANDUM FOR: Chief, Operations Division, IEG

THROUGH : Chief, Technical Planning Branch, OD

SUBJECT : Visit to NPIC by ARGO and AID Representatives

1. of ARGO and Messers of AID visited NPIC/IEG on Tuesday, 11 May 1971.

2. The purpose of the visit was to view coverage of East Pakistan to determine the tatus of transportation and material handling facilities. Knowledge of the condition of these features is required as input to a pending decision to provide U.S. helicopters for supply distribution.

3. The visitors were taken to the SEAB/IEG and given a briefing by They also inspected the film of the covered areas.

4. The quality and quantity of coverage was not sufficient to form firm conclusions. When told that was due in this coming weekend they asked if they could return Monday afternoon to see the new coverage. I advised them this was possible. They will contact me on Monday after I determine that the new coverage will answer their questions.

/S/

IEG ARGO Representative

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WORKING PAPER

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28 May 1971

MEMORANDUM FOR THE RECORD

SUBJECT: ARGO Meeting, Room 476, EOB, 26 May 1971 - 9:30 A.M. - 12:00 P.M.

Chairman, called the meeting and introduced Skip Skow who presented the two briefers on transducers for a real-time system. of OSP briefed on the solid state system and of NRO/West Coast briefed on return beam vidicon, laser scanners and tape storage systems. The purpose of these briefings is to update the civilian agencies with advanced state-of-the-art in order that they might not waste resources on obsolete or cruder systems.

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The clearance level was an "ersatz" TKH in order to avoid multiple one-time clearances. A need-to-know caution was announced regarding spreading the picture of NRO's efforts around the civilian agencies. While the briefers held back the total state-of-the-art extent and talked 50' and 30' to 100' systems, the system's capabilities seemed quite apparent to the scientific types present.

25X1

announced that NASA will receive U-2's for operation. He noted that this will change the function of ARGO regarding channeling U-2 coverage requests to NRP (except to supplement NASA). He asked that the committee review its function and needs and how, if necessary, should it change. Reston stated it was negotiating with NASA regarding handling storage and "sales" for NASA's U-2's and possibly indexing. querried whether there was any ARGO role for the NASA U-2's and the effect of the first ERTS on the ARGO function. wanted the ARGO to continue to help meet his needs (Interior). mentioned that Rome and Wright - Pat had advised them to come direct to them for use of their U-2's. noted that ARGO should not manage direct inter-agency civilian functions but noted there were now three separate channels for coverage. closed the discussion with the statements that he and would do some homework and set-up discussion on this for next month. commented that after his own experience with ARGO and his review some months ago with the "Assistant Secretaries" of the civilian departments, he felt ARGO still had a role regarding information exchange, satellites and other matters.

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WORKING PAPER

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reported that he and would meet with 25X1

head of OEP to revive the dormant "disaster report" which had recommended a central setup.

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NPIC ARGO Representative

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25X1

25X1

16 June 1971

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MEMORANDUM FOR THE RECORD

SUBJECT: Steering Committee/ARGO Meeting, 26 May 1971

1. 25X1 and I attended the meeting of the Steering Committee/ARGO on ~~26 May~~ 1971 at the Executive Office Building. 25X1 chaired the meeting.

2. The meeting was unusual in two respects. Firstly, the agenda consisted of two briefings with only about 15 minutes devoted to the ARGO business meeting. Secondly, the briefings were unique in that their topic was electro/optical systems under development by the NRO. 25X1 NRO representative to ARGO, introduced the topic as well as the speakers. Both briefings were handled under the T-KH Control System on a need to know basis. Normally, NRO programs are not briefed T-KH until development is complete and the system is about to go operational. The NRO felt, however, that since ERTS-A is scheduled for launch in March 1972, the concerned parties (ARGO-Peaceful Uses) should be brought up to date on the NRO efforts along similar lines.

The first briefing was presented by DD/S&T/OSP, 25X1 and was concerned with "A Solid State Imaging System" employing a photo diode sensor. The system employs a detector array for sampling the output of the optical system. The array consists of two rows, ~~each containing 6,080~~ individual photo diodes, each diode measuring 0.7 by 0.9 mil. The spacing between the rows is 1.2 mils. The detector array is 7.3 inches in length. The system has a focal length of 36.5 inches, a field angle of 11.3 degrees, and if flown at a 500 nm altitude, covers a swath width of 100 nm. The detector array is manufactured in segments which are combined to form the total detector. ERTS program personnel have been given samples of the detector segments.

SAFSP, spoke on three systems, two of which 25X1 will most probably be discontinued. One of these employs a vidicon receiver with a one-inch square active format. This

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SUBJECT: Steering Committee/ARGO Meeting, 26 May 1971

is a high density detector utilizing 1,600 to 1,800 diodes per inch and is similar in operation to the Bell Telephone picture phone. An interesting point is that due to the high detector density, the diodes are sampled via an electron beam rather than through leads physically connected to them. This is a non-storage data handling system and is a framing rather than a scanning device. A similar system employing a "tape recording camera" was also mentioned. This system employs, as the recording medium, a silicon coated stainless steel tape. This tape is erasable and used much like standard video recording tape. It provides a much greater packing density than magnetic tape, however.

The system described as the one most likely to fly has a built in information storage capability and utilizes existing ground receiving and image reconstruction equipment. The terrain image is photographed by a film record as in our present systems. The exposed film is then bimat processed on orbit, the resulting negative is laser scanned, the information digitized, and the results transmitted to the tracking station for recording and/or reconstruction. The system presently being built is expected to produce a resolution of 120 1/mm.

All of the briefings were somewhat sketchy in general scope, probably for security reasons, but broad enough to give a general feel for the types of intelligence systems which are under development. A set of prints made from the viewgraphs presented has been requested and will be added to this paper upon receipt.

3. The short ARGO business meeting is recapped as follows.

Since both NASA, Rome AFB, and Wright Patterson AFB have U-2s available for ARGO use, it was suggested that requests for coverage be channeled to these agencies rather than the NRP. The reminder came that NASA's U-2s are committed to ERTS simulation and not available for other uses. felt, however, that ARGO requests could still influence the use of the aircraft when and if available.

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SUBJECT: Steering Committee/ARGO Meeting, 26 May 1971

He then mentioned that the ARGO needs to be continued at least until the first ERTS flies. The suggestion that the ARGO be continued for only about another year or so brought an uproar from the group and was reminded that ERTS-A is a test system and the group needs the present avenue of communication, assistance, and resources now furnished through ARGO channels. On this note, the meeting was adjourned.

25X1

25X1

Chief, Section II
IEB/APSD/TSG/NPIC

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EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY
WASHINGTON, D.C. 20506

October 20, 1971

Dear [redacted] 25X1

Enclosed is a letter relating to indicators of African swine fever in Cuba. Would you let me know whether these indicators have been or could be taken into account in responding to the initial request we have had from the Department of Agriculture.

Sincerely,

[redacted] 25X1

Enclosure

[redacted] 25X1
Chief, Imagery Exploitation Group, NPIC
Hq Central Intelligence Agency
Washington, D.C. 20505

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
WASHINGTON, D.C. 20250

OFFICE OF ADMINISTRATOR

October 7, 1971

[redacted] 25X1

An animal disease eradication program involving the slaughter and disposal of carcasses would make use of burial pits and burning pyres during the active part of the campaign. Depending upon the number of animals involved, these could be quite numerous and large. For example, in the 1967-68 outbreak in England, it was not uncommon to build a burning pyre 100 yards in length. As you might readily imagine, this creates a large fire visible for great distances. Disposal pits would be less obvious, but could also be visible.

After a program has been completed, you would expect a period of inactivity relating to livestock species involved. For example, a swine feeding operation containing 30,000 animals should be quite obvious and following an eradication program would be conspicuous by the lack of animals contained in the facilities. Also, disposal pits in the vicinity of a large feeding operation would still be visible as a fresh mound of dirt during the post-eradication program.

Usually the location of burning pyres would be raked and seeded over to restore the natural turf and within a very short period of time would not be visible.

The absence of livestock vehicles along the highways would be expected in the post-eradication program since quarantine measures would still be in effect and the premises are not being restocked for a considerable period of time.

Slaughterhouse operations may continue to be in operation for species not involved; for example, slaughtering of cattle would continue in the area where an African swine fever eradication program has taken place; however, there may be slaughterhouses devoted to swine only which would be inactive.

These are a few of the points which we might consider in evaluating recent information obtained.

[redacted] 25X1

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IEG-242/71
28 September 1971

MEMORANDUM FOR: [redacted] 25X1
Office of Science and Technology
Executive Office of the President

SUBJECT : African Swine Fever-Cuba

REFERENCE : NPIC Project 251172

1. In response to a request by [redacted] 25X1 formerly of your office, the National Photographic Interpretation Center (NPIC) has searched recent photography of Cuba for evidence of African swine fever. No evidence of such activity was detected.

2. Twelve OLD HEAD missions, flown between 28 April and 14 September, which covered 90 percent of the western provinces of Cuba, (Pinar del Rio, Havana, and Matanzas) were carefully searched. Two large hoggeries and several smaller hoggeries as well as three slaughter houses were studied. Activity at each of these appeared to be normal.

3. The swine fever epidemic reportedly reached its peak in Havana Province during the early part of July 1971. OLD HEAD missions did not cover Havana Province between 15 June 1971 and 4 August 1971. Coverage of Havana Province on 5 August, 20 August, and 14 September 1971 (the most recent) revealed no activity related to the reported African swine fever epidemic.

[redacted] 25X1

Chief, Imagery Exploitation Group,
NPIC

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IEG-271/71
2 November 1971

MEMORANDUM FOR: [redacted] 25X1
Office of Science and Technology
Executive Office of the President

SUBJECT : African Swine Fever - Cuba

REFERENCE : NPIC Project 251172

1. In response to your query of October 20, 1971, I would like to assure you that the indicators laid forth in [redacted] 25X1
7 October letter to [redacted] were taken into account in our 25X1
response to your initial request.

2. The most obvious indicators, and the first considered, were the burial pits, buring pyres, inactivity related to livestock (hoggeries, feeding pens, pastures), and fresh mounds of earth (covered burial pits). Also considered were the less obvious indicators such as acvivity at slaughterhouses and the movement of stock trucks.

3. Unfortunately, as reported in our response to the original request, we did not have photographic coverage of Havana Province during the early part of July 1971, the reported peak period of the epidemic. But all coverage between 28 April and 14 September was carefully searched. No evidence of a large scale animal eradication program was detected.

[redacted] 25X1

[redacted] 25X1
Chief, Imagery Exploitation Group
NPIC

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